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VOL. XL. No. 16.

$4.00 per year. Single Copy 10 Cents.

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The Commercial Importance of Charleston,
By A. W. SIMPSON, Jr.

The Torrens System for the South,
By CHARLES J. HADEN.

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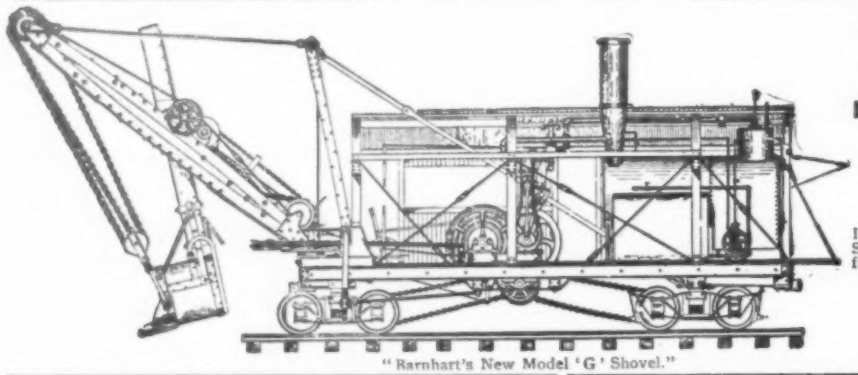

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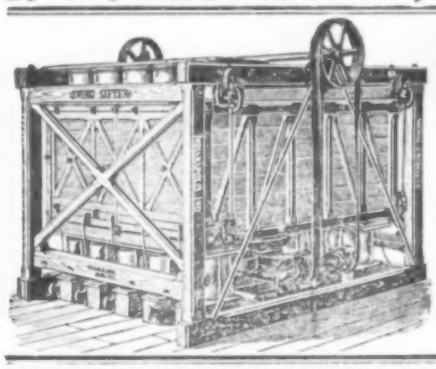

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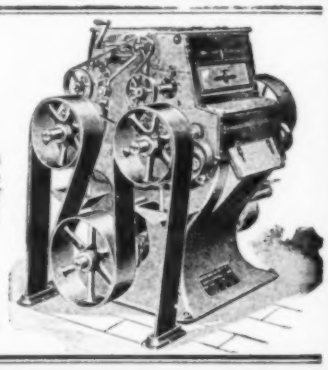

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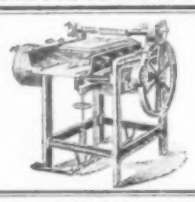

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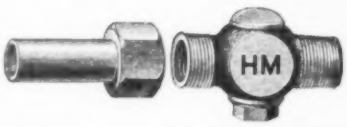

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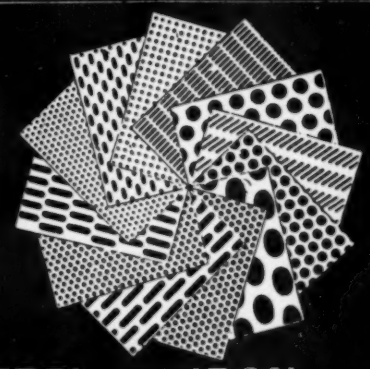

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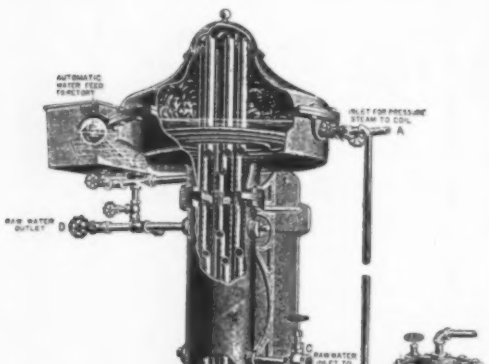

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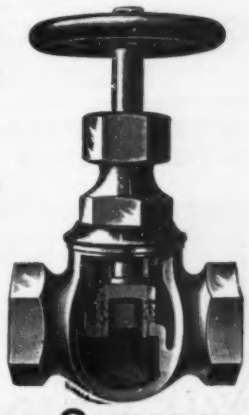

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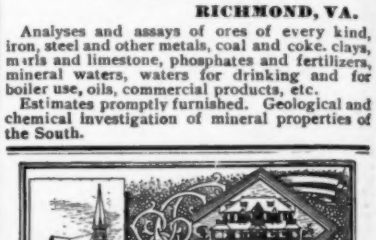

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New Jersey Foundry & Machine Co., Plainfield, N. J.
Northern Electrical Mfg. Co., Madison, Wis.
Ridgway Dynamo & Engine Co., Ridgway, Pa.
Smethurst & Allen, Philadelphia, Pa.
Smith, Samuel J., & Co., Charlotte, N. C.
Sprague Electric Co., New York, N. Y.
Stanley Electric Mfg. Co., Pittsfield, Mass.
Tower Binford Elec. & Mfg. Co., Richmond, Va
Triumph Electric Co., Cincinnati, O.
Victor Electric Co., Chicago, Ill.
Westinghouse Elec. & Mfg. Co., Pittsburg, Pa.

Electric Contractors.
Alexander, Jr., S. B., Co., Charlotte, N. C.
Jenks, W. H., Richmond, Va.
Northern Elec. Mfg. Co., Madison, Wis.
Stanley Elec. Mfg. Co. Pittsfield, Mass.
Tower-Binford Elec. & Mfg. Co., Richmond, Va.

Electrical Instruments.
Northern Electric Supply Co., Madison, Wis.
Stanley Electric Mfg. Co., Pittsfield, Mass.

Electric-Light and Power Plants.
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Commercial Electric Co., Indianapolis, Ind.
Crocker-Wheeler Co., Ampere, N. J.
General Electric Co., Schenectady, N. Y.
General Incandescent Arc Light Co., New York.
N. J. Foundry & Machine Co., Plainfield, N. J.
Northern Electrical Mfg. Co., Madison, Wis.
Ridgway Dynamo & Engine Co., Ridgway, Pa.
Smethurst & Allen, Philadelphia, Pa.
Sprague Electric Co., New York, N. Y.
Stanley Electric Mfg. Co., Pittsfield, Mass.
Tower-Binford Elec. & Mfg. Co., Richmond, Va.
Triumph Electric Co., Cincinnati, O.
Westinghouse Elec. & Mfg. Co., Pittsburg, Pa.

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General Electric Co., Schenectady, N. Y.
Northern Electrical Mfg. Co., Madison, Wis.
Sprague Electric Co., New York, N. Y.
Stanley Electric Mfg. Co., Pittsfield, Mass.
Triumph Electric Co., Cincinnati, O.
Westinghouse Electric Co., Pittsburg, Pa
Western Electrical Supply Co., St. Louis, Mo

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Smith, Samuel J., & Co., Charlotte, N. C.
Tower-Binford Elec. & Mfg. Co., Richmond, Va.

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Alexander, Jr., Co., S. B., Charlotte, N. C.
General Electric Co., Schenectady, N. Y.
Guarantee Electric Co., Chicago, Ill.
Jenks, W. H., Richmond, Va.
Johns Mfg. Co., H. W., New York, N. Y.
Kentucky Electrical Co., Owensboro, Ky.
McCay Engineering Co., Baltimore, Md.
Northern Electrical Mfg. Co., Madison, Wis.
Smith, Samuel J., & Co., Charlotte, N. C.
Stanley Electric Mfg. Co., Pittsfield, Mass.
Sturtevant Co., B. F., Boston, Mass.
Tower-Binford Elec. & Mfg. Co., Richmond, Va.
Triumph Electric Co., Cincinnati, O.
Western Electrical Supply Co., St. Louis, Mo.
Westinghouse Elec. & Mfg. Co., Pittsburg, Pa

Electric Locomotives. (See Locomo. Bldrs.)

Electric Trucks.
Baldwin Locomotive Works, Philadelphia, Pa.

Electrotypers.
American Type Founders Co., Baltimore, Md.
Spencer & Hall, Baltimore, Md.

Elevators.
Albro-Clem Elevator Co., Philadelphia, Pa
Aultman Co., The, Canton, O.
Bartlett, Hayward & Co., Baltimore, Md.
Bates', James, Sons, Baltimore, Md.
Craig Ridgway Co., Coatesville, Pa.
Curran, Jas. H., Elevator Co., Cincinnati O.
Eaton & Prince Co., Chicago, Ill.
Fairmount Machine Co., Philadelphia, Pa.
Faunt Le Roy & Co., Baltimore, Md.
Link-Belt Engineering Co., Philadelphia, Pa
Maryland Foundry & Machine Co., Baltimore, Md.
Morse, Williams & Co., Philadelphia, Pa.
Parkhurst Bros. & Co., Indianapolis, Ind
Park Mfg. Co., Charlotte, N. C.
Speidel, J. G., Reading, Pa.
Union Elevator & Machine Co., Chicago, Ill.
Westbrooks, J. B., Fdry. & Mch. Co., Danville, Va.

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Caldwell, H. W., & Son Co., Chicago, Ill.
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Dodge Mfg. Co., Mishawaka, Ind.
Jeffrey Mfg. Co., Columbus, O.
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Tate, Jones & Co., Pittsburg, Pa.

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Dow Wire Work Co., Louisville, Ky.
Dufur & Co., Baltimore, Md.
Ludlow-Saylor Wire Co., The, St. Louis, Mo.
Myers Mfg. Co., The Fred J., Hamilton, O.

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Scranton Corundum & Emery Wheel Co., Scranton, Pa.
Tanite Co., The, Stroudsburg, Pa.

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Blanton, Jr., E. A., Philadelphia, Pa.
Collier & Brown, Atlanta, Ga.
Erikson, Edw. E., Pittsburg, Pa.
Given, Wm. M., Birmingham, Ala.
Hall, Charles A., M. E., Mobile, Ala.
Hutton Engineering Co., Lexington, Va.
Kennedy, Walter, Pittsburg, Pa.
Lederle, Frank, Atlanta, Ga.
Marrow, W. Drummond, Charlotte, N. C.
Morrison & Kindervater, Richmond, Va.
Nicol, T. W., Mobile, Ala.
Northern Elec. Mfg. Co., Madison, Wis.
Perry, Nathaniel V., Atlanta, Ga.
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Pratt Laboratory, N. P., Atlanta, Ga.
Railways & Light Co. of America, Balto, Md
Risdon-Alcott Turbine Co., Mount Holly, N. J.
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Thorburn Reid, New York, N. Y.
Tower-Binford Elec. & Mfg. Co., Richmond, Va.
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Witherow, Jas. P., Pittsburg, Pa.

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Atlas Engine Works, Indianapolis, Ind
Ball Engine Co., The, Erie, Pa.
Ball & Wood Co., New York, N. Y.
Boston Blower Co., Hyde Park, Mass.
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Mecklenburg Iron Works, Charlotte, N. C.
Minnigerode, Wm., Lynchburg, Va.
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Phoenix Iron Works Co., Meadville, Pa.
Remington Machine Co., Wilmington, Del.
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Salem Iron Works, Winston-Salem, N. C.
Schofields, J. S., Sons Co., Macon, Ga.
Smith-Courtney Co., Richmond, Va.
Southern Eng. & Boiler Works, Jackson, Tenn.
Southwark Foundry & Machine Co., Philadelphia, Pa.
St. Louis Iron & Machine Works, St. Louis, Mo.
Struthers, Wells & Co., Warren, Pa
Sturtevant Co., B. F., Boston, Mass.
Union Iron Works Co., Selma, Ala.
Valk & Murdoch Iron Works, Charleston, S. C.
Valley Iron Works, Williamsport, Pa.
Vilter Mfg. Co., Milwaukee, Wis.
Wetherill, Robert, & Co., Chester, Pa
Westinghouse Machine Co., Pittsburg, Pa.
York Mfg. Co., York, Pa.

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Blakeslee Mfg. Co., The, Birmingham, Ala.
Columbus Machine Co., Columbus, O.
Cornell Machine Co., Chicago, Ill.
Fairbanks Co., Baltimore, Md.
Olds Motor Works, Detroit, Mich.
Otto Gas Engine Works, Philadelphia, Pa.
Struthers, Wells & Co., Warren, Pa.
Westinghouse Machine Co., Pittsburg, Pa

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Mietz, A., New York, N. Y.

Engines. (Oil.)
Aultman Co., The, Canton, O.

Engravers.
Alpha-Photo Engraving Co., Baltimore, Md.
Baltimore Engraving Co., Baltimore, Md.
Middleton, J. W., Chicago, Ill.

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Bonar James, & Co., Pittsburg, Pa.
Burt Mfg. Co., Akron, O.
Sterling Blower & Pipe Mfg. Co., Hartford, Conn.

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Cornell, J. B. & J. M., New York, N. Y.

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New Jersey Foundry & Machine Co., Plainfield, N. J.

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Paragon Fan & Motor Co., New York, N. Y.

Fans. (Ventilating.) [See Blowers, Exhaust Fans.]

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Berryman, Jas., Philadelphia, Pa.
Bonar, James, & Co., Pittsburg, Pa.
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Green Fuel Economizer Co., Matteawan, N. Y.
Harrison Safety Boiler Works, Philadelphia, Pa.
Hawley Down Draft Furnace Co., The, Atlanta, Ga.
Kelley, Benj. F., & Son, New York, N. Y.
National Pipe Bending Co., New Haven, Conn.
Park Mfg. Co., Charlotte, N. C.
Patterson, Frank L., New York, N. Y.
Phillips, E. W., Baltimore, Md.
Phoenix Iron Works Co., Meadville, Pa.
Scaife, Wm. B., & Sons, Pittsburg, Pa.
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Taunton Locomotive Mfg. Co., The, Taunton, Mass.
Warren Webster Co., Camden, N. J.

Felting. (Hair.)
Baeder, Adamson & Co., Philadelphia, Pa.

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Balderston, H., & Son, Baltimore, Md.
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Burger Iron & Wire Works Co., Akron, O.
Dow Wire Works Co., Louisville, Ky.
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Ludlow-Saylor Wire Co., St. Louis, Mo.
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Nicholson File Work, Providence, R. I.

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Hammond Iron Works, Warren, Pa.
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Watson, N. A., Erie, Pa.

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Burt Mfg. Co., The, Akron, O.
Textile Mill Supply Co., Charlotte, N. C.

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Johnson, J. & Co., New York, N. Y.
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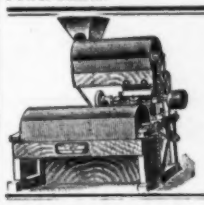

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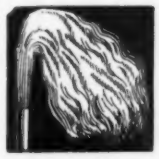

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Dow Wire Works Co., Louisville, Ky.

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Adams, J. M., Baltimore, Md.
Wilce Co., The T., Chicago, Ill.

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DeLoach Mill Mfg. Co., Atlanta, Ga.
Nordyke & Marmon Co., Indianapolis, Ind.
Salem Machine Works, Salem, Va.
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Wolf Co., Chambersburg, Pa.

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Wilson, H. McK., & Co., St. Louis, Mo.

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Broomell, Schmidt & Co., Ltd., York, Pa.
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Erikson, Edw. E., Pittsburg, Pa.
Kennedy, Walter, Pittsburg, Pa.
Means & Fulton Iron Works, Birmingham, Ala.
Witherow, Jas. P., Pittsburg, Pa.

Furnace Heating. (Stoves.)
Richmond Stove Co., Norwich, Conn.

Furnaces. (Metallurgical.)
Rockwell Engineering Co., New York, N. Y.

Furnaces. (Gas Soldering.)
Jacobson Mch. Mfg. Co., Warren, Pa.

Fuse. (Wire Blocks, Fuses, etc.)
American Electric Fuse Co., Adrian, Mich.

Gages (Recording) and Counters.
American Steam Gauge Co., Boston, Mass.
Crosby Steam Gauge & Valve Co., Boston, Mass.

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American Sheet Steel Co., New York, N. Y.

Gas Regulator.
Jacobson Machine Manufacturing Co., Warren, Pa.

Gas Producers.
Erikson, Edward E., Pittsburg, Pa.
Wood, R. D., & Co., Philadelphia, Pa.

Gas and Steam Fitters' Tools.
Saunders' Sons, D., Yonkers, N. Y.

Gaskets. (Rubber.)
Boston Belting Co., Boston, Mass.

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Whiton Machine Co., D. E., New London, Conn.

Gears and Pinions. (Raw Hide.)
New Process Rawhide Co., Syracuse, N. Y.

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Fairmount Machine Co., Philadelphia, Pa.
Jeffrey Mfg. Co., The, Columbus, O.
Link-Belt Engineering Co., Philadelphia, Pa.
Morse, Williams & Co., Philadelphia, Pa.
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Catlett, Chas., Staunton, Va

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Columbia Phonograph Co., Balto., Md.

Grates and Grate Bars.
McClave, Brooks & Co., Scranton, Pa.

Grates. (Domestic.)
Burnam Grate Co., Huntsville, Ala.

Grain Elevator Supplies.
Aultman Co., The, Canton, O.
Caldwell, H. W., & Son Co., Chicago, Ill.
Clark Co., The W. J., Salem, O.
Dodge Mfg. Co., Mishawaka, Ind.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Engineering Co., Nicetown, (Phila.) Pa.

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Detroit Graphite Mfg. Co., Detroit, Mich.
Dixon Crucible Co., Jos., Jersey City, N. J.
Hill & Griffith Co., Cincinnati, O.

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Robinson, Wm. C., & Son, Baltimore, Md.

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Norton Emery Wheel Co., Worcester, Mass.
Scranton Corundum & Emery Wheel Co., Scranton, Pa.
Sturtevant Mill Co., Boston, Mass.
Tanite Co., The, Stroudsburg, Pa.
Vitrified Wheel Co., Westfield, Mass.

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Huther Bros., Rochester, N. Y.

Hammers. (Steam and Power.)
Dupont Mfg. Co., St. Johnsbury, Vt.
Robinson, J. M. & Co., Cincinnati, O.

Hammers. (Pneumatic.)
Standard Pneumatic Tool Co., Chicago, Ill.

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Egan Co., The, Cincinnati, O.
Fay, J. A., & Co., Cincinnati, O.
Root, B. M., York Pa.
Trevor Mfg. Co., Lockport, N. Y.

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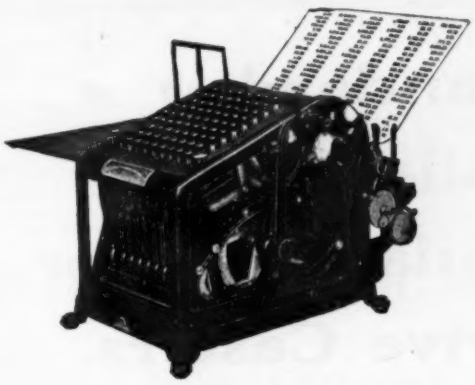

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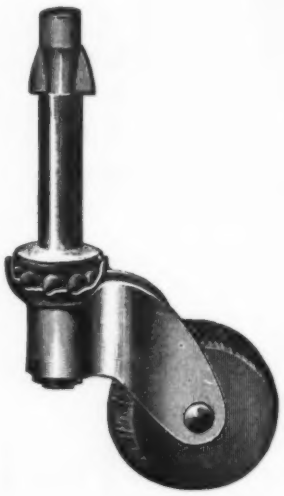

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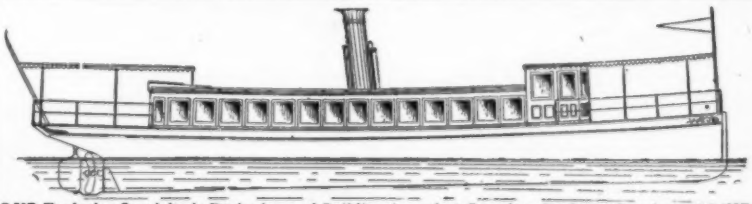

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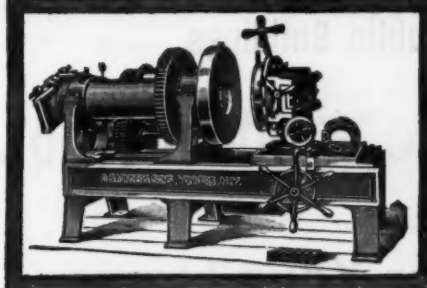

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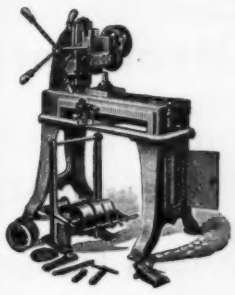

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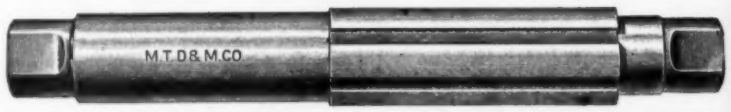

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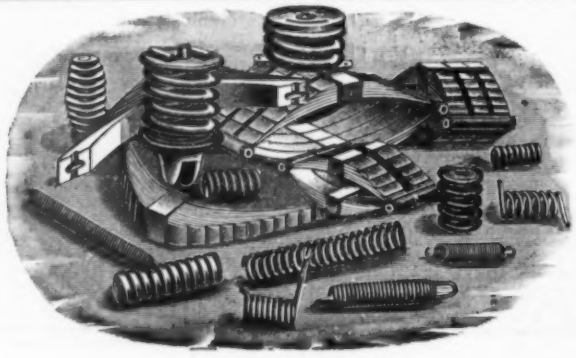

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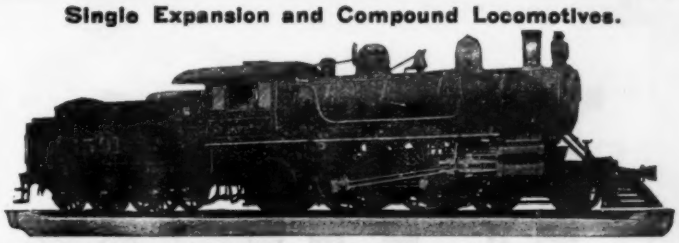

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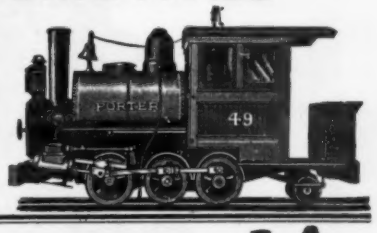

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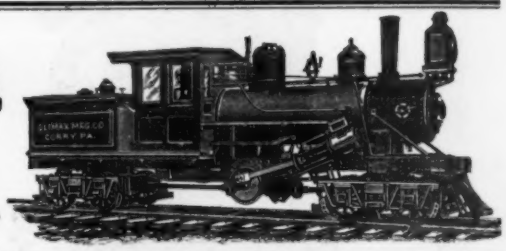

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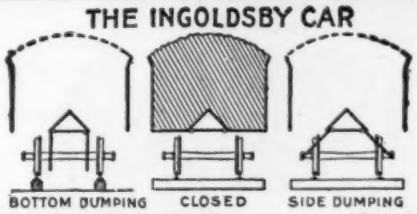

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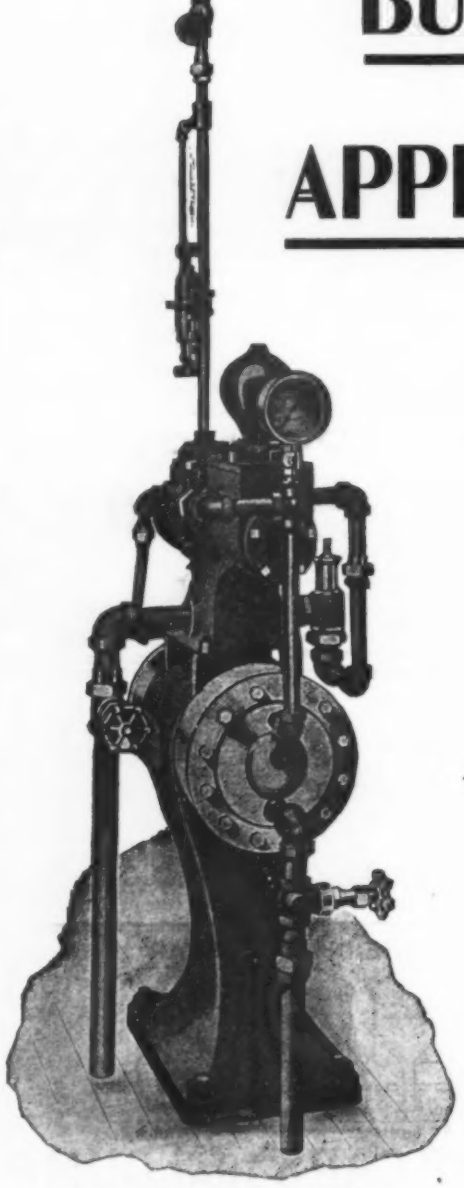
We Install Complete Fuel Oil Burning Plants and Guarantee Satisfactory Operation.



Rockwell FUEL OIL Pumping System.

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OIL Burners,
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OIL Hose,
OIL Furnaces.

Rockwell Engineering Co.,

26 Cortlandt St., NEW YORK.

Southern Representative, FRANK PAUL BARBER, Hennen Building, New Orleans, La.

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Seals. (Stock Certificates, etc.)
Middleton, J. W., Chicago, Ill.

Self Measuring Shop Oil Cabinet.
Bowser & Co., S. F., Ft. Wayne, Ind.

Separators. (Dust.)
Allington & Curtis Mfg. Co., Saginaw, Mich.
Sterling Blower & Pipe Mfg. Co., Hartford, Conn
Sturtevant Co., B. F., Boston, Mass.

Separators. (Steam and Oil.)
American Tool Works Co., Cincinnati, O.
Austin Separator Co., Detroit, Mich.
Bonar, James, & Co., Pittsburg, Pa.
Harrison Safety Boiler Works, Philadelphia, Pa.
Webster Warren & Co, Philadelphia, Pa.

Shapers.
American Tool Works Co., Cincinnati, O.

Sheet-Metal-Working Machinery.
[See Metal-Working Machinery.

Sheet Steel and Iron.
American Sheet Steel Co., New York, N. Y.

Shingle, Lath and Stave Machinery.
[See Woodworking Machinery.]
Lane Mfg. Co., Montpelier, Vt.
Trevor Mfg. Co., Lockport, N. Y.

Ship Builders. (Iron and Steel)
Newport News Shipbuilding & Dry Dock Co., Newport News, Va.

Skylights.
Badger, E. B., & Sons Co., Boston, Mass.
Dowman Mfg. Co., Atlanta, Ga.
Merchant & Co., Inc., Philadelphia, Pa.
National Skylight & Construction Co., New York, N.Y.
Noerden Co., E. Van, Boston, Mass.

Slate. (Roofing and Blackboard.)
Galt, John, & Sons, New York, N. Y.
Genuine Bangor Slate Co., Easton, Pa.
David McKenna, Slatington, Pa.
Williams, J. R., & Co., Arvonia, Va.

Slaters' Tools.
Galt, John, & Sons, New York, N. Y.

Smoke Stacks. (Iron and Steel.)
Hammond Iron Works, Warren, Pa.
Keeler, E., Co., Williamsport, Pa.
Littleford Bros., Cincinnati, Ohio.
Schofields, J. S., Sons Co., Macon, Ga.
York Mfg. Co., York, Pa.

Soapmakers' and Butchers' Mchy.
Dopp, H. Wm., & Son, Buffalo, N. Y.

Solder.
Hiertz, Theo., & Son, St. Louis, Mo.
Ryan, J. J., & Co., Chicago, Ill.

Speaking Tubes.
Besly, Chas. H., & Co., Chicago, Ill.

Springs. (Bicycle Saddle, Machinery, Railway and Spiral.)
Besly, Chas. H., & Co, Chicago, Ill.
Boston Belting Co., Boston, Mass.
Cary Spring Works, New York, N. Y.
French Spring Co., A., Pittsburg, Pa.
Latrobe Steel & Coupler Co., Philadelphia, Pa.
Ladlow-Saylor Wire Co., The, St. Louis, Mo.

Spelter.
Hiertz, Theo., & Son, St. Louis, Mo.

Sprinklers. (Automatic.)
Bailey-Lebby Co., Charleston, S. C.
General Fire Extinguisher Co., Providence, R. I.
International Sprinkler Co., Philadelphia, Pa.
Fleuger & Henger Mfg. Co., St. Louis, Mo.

Stairways. (Iron.)
Lykes, John D., Birmingham, Ala.

Stamp Mills.
Mecklenburg Iron Works, Charlotte, N. C.

Standpipes.
Birmingham Boiler Works, Birmingham, Ala.
Hartley Boiler Works, Montgomery, Ala.
Keeler Co., E., Williamsport, Pa.
Means & Fulton Iron Works, Birmingham, Ala.
Virginia Bridge & Iron Co., Roanoke, Va.
York Mfg. Co., York, Pa.

Steam Gages.
Crosby St. Gage & Valve Co., Boston, Mass.
Lunkenheimer Co., Cincinnati, O.

Steam Fitters and Supplies.
General Fire Extinguisher Co., Providence, R. I.

Steam Heating.
General Fire Extinguisher Co., Providence, R. I.
Keeler Co., E., Williamsport, Pa.
Peck-Hammond Co., The, Cincinnati, O.
Warren Webster & Co., Camden, N. J.

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Steam Traps.
American Blower Co., Detroit, Mich.
Bonar, James, & Co., Pittsburg, Pa.
Davis, The John Co., Chicago, Ill.
Haines Co., W. S., Philadelphia, Pa.
Mason Regulator Co., Boston, Mass.
Sturtevant Co., B. F., Boston, Mass.
Wright Mfg. Co., Detroit, Mich.

Steamship Lines.
Atlantic Transport Co., Baltimore, Md.
Bay Line, Baltimore, Md.
Merchants & Miners' Trans. Co., Baltimore, Md.
Richmond & York River Line, Baltimore, Md.

Steel. (Manufacturers of.)
American Sheet Steel Co., New York, Y.
Chester Steel Castings Co., Philadelphia, Pa.
Latrobe Steel Co., Philadelphia, Pa.

Steel Couplers. (Automatic.)
Latrobe Steel & Coupler Co., Philadelphia, Pa.

Steel Hoops, Bands.
American Steel Hoop Co., New York, N. Y.

Steel Rods. (Polished.)
Finished Steel Co., The, Youngtown, O.

Stills. (Turpentine.)
McMillan Bros. Co, Mobile, Ala.

Stokers. (Mechanical.)
Westinghouse Machine Co., Pittsburg, Pa.

Stoves, Ranges, etc.
Hutchinson Bros., Baltimore, Md.

Street Lamps.
Dietz Co., R. E., New York, N. Y.

Structural Steel and Iron.
American Bridge Co., New York, N. Y.
American Steel Hoop Co., New York, N. Y.
Bartlett, Hayward & Co., Baltimore, Md.
Belmont Iron Works, Philadelphia, Pa.
Columbia Bridge Co., Pittsburg, Pa.
Girard Boiler & Mfg. Co., Girard, O.
Morrison & Kindervater Richmond, Va.
National Skylight & Construction Co., New York, N.Y.
Scaife, Wm. B., & Sons., Pittsburg, Pa.
Schreiber L., & Sons Co., The, Cincinnati, O.
Virginia Bridge & Iron Co., Roanoke, Va.

Studs, Nuts.
Hoopes & Townsend Co., Philadelphia, Pa.
Miles, Franklin S., Philadelphia, Pa.
Milton Mfg. Co., Milton, Pa.

Sugar-Mill Machinery.
Wolf Co., Fred. W., Chicago, Ill.

Switchboards, Switches, etc.
General Incandescent Arc Light Co., New York, N. Y.
Smith, Sam'l J., & Co., Charlotte, N. C.
Western Electrical Supply Co., St. Louis, Mo.
Westinghouse Electric & Mfg. Co., Pittsburg, Pa.

Tanks. (Iron and Steel.)
Bartlett, Hayward & Co., Baltimore, Md.
Birmingham Boiler Works, Birmingham, Ala.
Caldwell, Co., W. E., Louisville, Ky.
Clarendon Boiler Works, N. Clarendon, Pa.
Gem City Boiler Co., Dayton, O.
Girard Boiler & Mfg. Co., Girard, O.
Harry Brothers Co., Dallax, Tex.
Hartley Boiler Works, Montgomery, Ala.
Hazelton Boiler Co., New York, N. Y.
Keeler Co., E., Williamsport, Pa.
Lombard Iron Works & Supply Co., Augusta, Ga.
Littleford Bros., Cincinnati, O.
Means & Fulton Iron Works, Birmingham, Ala.
Petroleum Iron Works Co., Washington, Pa.
Scaife, Wm. B., & Sons, Pittsburg, Pa.
Smith Co., S. Morgan, York, Pa.
Valk & Murdoch Iron Works, Charleston, S. C.
Virginia Bridge & Iron Co., Roanoke, Va.
Wolf Co., Fred. W., Chicago, Ill.
Wood, R. D, & Co., Phila., Pa
York Mfg. Co., York, Pa.

Tanks. (Wood.)
Caldwell, Co., W. E., Louisville, Ky.
Cypress Lumber Co., Apalachicola, Fla.
Davis, G. M., & Son, Palatka, Fla.
Flint & Walling Mfg. Co., Kendallville, Ind.
Gulf Cypress Tank Co., Mt. Vernon, Ala.
Lewis, H. F., & Co., Ltd., New Orleans, La.
Woolford Wood Tank Mfg. Co., G., Philadelphia, Pa.

Telephones. (Supplies, Equipment.)
Alexander, Jr., Co., S. B., Charlotte, N. C.
Chesapeake Electric Co, Baltimore, Md.
Western Electrical Supply Co., St. Louis, Mo.

Telephone Poles.
New Orleans Wood Preserving Wks., New Orleans, La.
Tennessee Lumber Co., Lewisburg, Tenn.

Terne Plate.
Merchant & Co., Inc., Philadelphia, Pa.

Terra Cotta.
Pomona Terra Cotta Co., Pomona, N. C.
Warner Co, Charles, Wilmington, Del.

Textile Machinery [See Cotton Mill Mach.]

Tinplate.
Merchant & Co., Inc., Philadelphia, Pa.

Tires, Steel. (Locomotive and Car.)
Latrobe Steel Co., Philadelphia, Pa.

Tobacco Machinery.
Buckeye Iron & Brass Works, Dayton, O.
Cardwell Machine Co., Richmond, Va.

Tools. (Machinists' and Mechanics'.)
American Tool Works Co., Cincinnati, O.
Besly, Chas. H., & Co., Chicago, Ill.
Landis Tool Co., Waynesboro, Pa.
McCabe, J. J., New York, N. Y.
Morse Twist Drill & Machine Co., New Bedford, Mass.
Pratt & Whitney Co., Hartford, Conn.

Tools. (Pneumatic.)
Schaefer, W. J., & Co., New York, N. Y
Standard Peumatic Tool Co, Chicago Ill.

Tools. (Tinners'.)
Niagara Machine & Tool Works, Buffalo, N. Y.

Torches. (Kerosene.)
Wells Light Mfg. Co., New York, N. Y.

Tote Boxes.
Clark Co., W. J., Salem, O.

Towers. (Steel and Wood.)
Caldwell, Co., W. E., Louisville, Ky.

Towns.
Cedartown Company, Philadelphia, Pa.
Old Dominion Land Co. Newport News, Va.
Wheeling Board of Trade, Wheeling, W. Va.

Tramway. (Overhead.)
Cohoes Iron Foundry & Machine Co., Cohoes, N. Y.
Speidel, J. G., Reading, Pa.

Tramway. (Wire Rope.)
Aultman Co., Canton, O.
Caldwell, H. W., & Sons Co., Chicago, Ill.
Cresson Co., Geo. V., New York, N. Y.
Hunt Co., C. W., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Leschen, A., & sons Rope Co., St. Louis, Mo.
Lidgerwood Mfg. Co., New York, N. Y.
Link-Belt Engineering Co., Nicetown (Phila.), Pa.
McLanahan-Stone Machine Co., Hollidaysburg, Pa.
Trenton Iron Co., Trenton, N. J.

Tubing.
Besly, Chas. H., & Co., Chicago, Ill.
Ludlow-Saylor Wire Co., The, St. Louis, Mo.

Turbines. [See Water Wheels.]

Turntables.
Dodge Mfg. Co., Mishawaka, Ind.
Virginia Bridge & Iron Co., Roanoke, Va.

Valves.
American Steam Gauge Co., Jamaica Plain, Mass.
Automatic Reducing Valve Co., Chicago, Ill.
Boston Belting Co., Boston, Mass.
Crosby Steam Gage & Valve Co., Boston, Mass.
Croslen Mfg. Co., Chicago, Ill
Davis, The John, Co., Chicago, Ill.
Fairbanks Co., Baltimore, Md.
Gardner Governor Co., Quincy, Ill.
General Fire Extinguisher Co., Prov dence, R. I.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Jenkins Bros., New York, N. Y.
Ludlow Valve Mfg. Co., Troy, N. Y.
Lunkenheimer Co., Cincinnati, O.
Mason Regulator Co., Boston, Mass.
Mueller Mfg. Co., H., Decatur, Ill.
Sweet & Doyle, Cohoes, N. Y.
Wolf, Fred. W., & Co., Chicago, Ill.
Wood, R. D., & Co., Philadelphia, Pa.

Vencer Machines.
Coe Mfg. Co., The, Painesville, O.
Titus, E. E., Petersburg, Va.

Ventilators.
Dowman Mfg. Co., Atlanta, Ga.
Pancoast International Ventilator Co., Philadelp'a, Pa.
Van Noorden Co., E., Boston, Mass.

Vises.
Emmert Mfg. Co., Waynesboro, Pa.

Wagon Builders' Mchy. & Supplies.
Cordesman, Meyer & Co., Cincinnati, O.
Egan Co., The, Cincinntia, O.
Fay, J. A., & Co., Cincinnati, O.

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Aultman Co., The, Canton, O.
Bailey Lebby Co., The, Charlesto, S. C.
Cameron & Barkley Co., Charleston, S. C.
George Foundry & Machine Works, Rome, Ga.
McLanahan-Stone Machine Co., Hollidaysburg, Pa.

Watchman's Clocks.
Besly, Chas. H., & Co., Chicago, Ill.
Nanz & Co., New York, N. Y.
Textile Mill Supply Co., Charlotte, N. C.

Water and Electric Power.
Roanoke Nav. & Water-Power Co., Weldon, N. C.

Water Still.
Jewell Water Still Co., Chicago, Ill.

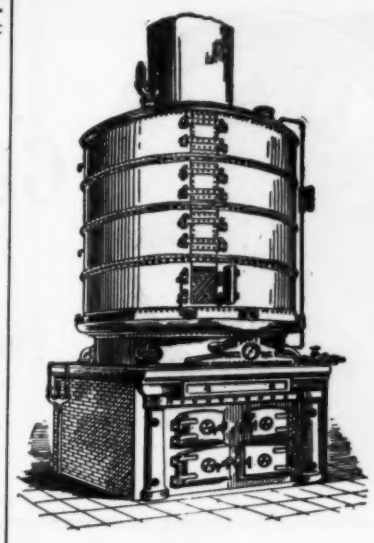
Water Softening Apparatus. (Purifying.)
Industrial Water Co., New York, N. Y.
Kennicott Water Softener Co., Chicago, Ill.
Scaife, Wm. B., & Sons, Pittsburg, Pa.

Water-Wheels and Turbines.
Lane Mfg. Co., Montpelier, Vt.
Leffel, James, & Co., Springfield, O.
Risdon-Alcott Turbine Co., Mount Holly, N. J.
Smith Co., S. Morgan, York, Pa.
Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
York Mfg. Co., York, Pa.

Water Meters.
Pittsburg Meter Co., E. Pittsburg, Pa.

Water Troughs. (Steel.)
Clarendon Boiler Works, N. Clarendon, Pa.

Water-Works and Sewerage.
Flint & Walling Mfg. Co., Kendallville, Ind.
Nicol, T. W. Mobile, Ala.
Wood, R. D., & Co., Philadelphia, Pa.



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Economizes space, fuel, maintenance and first cost to a greater degree than any other boiler. Combines simplicity and durability. Estimates and catalogue upon application.

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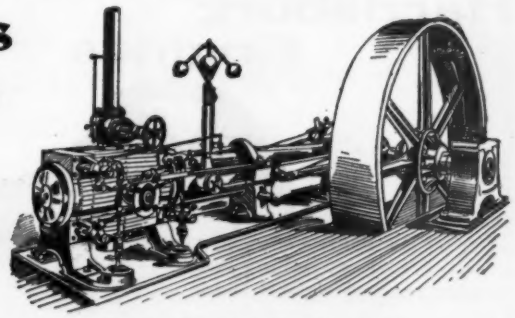
High-Pressure or Condensing.



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High-Duty Compound Pumping Engines, for Public Water Supply.

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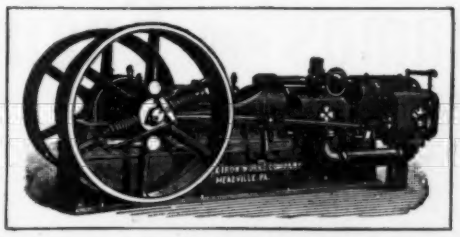

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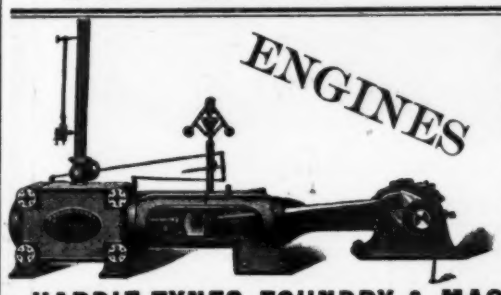

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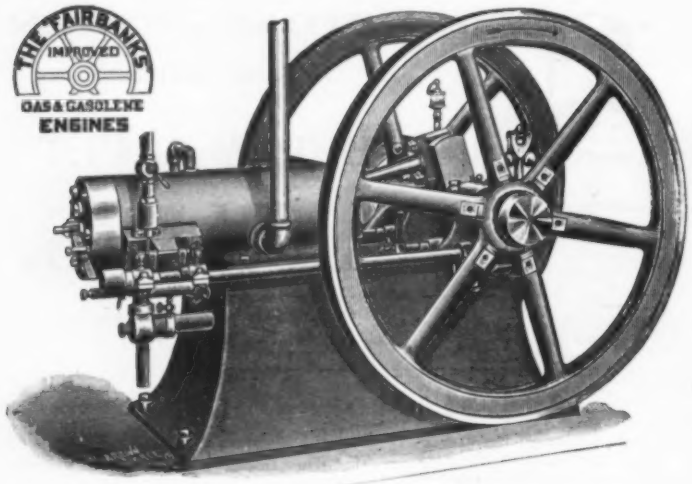

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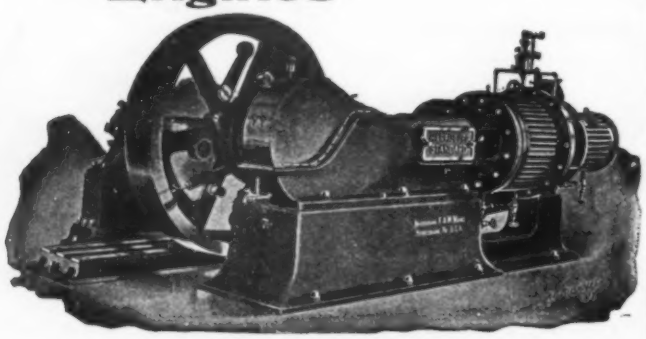

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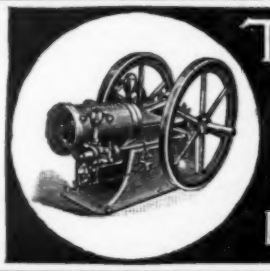
DIRECT CONNECTED STYLE

Harrisburg Foundry and Machine Works,

HARRISBURG, PA., U. S. A.



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LET US TELL YOU WHY

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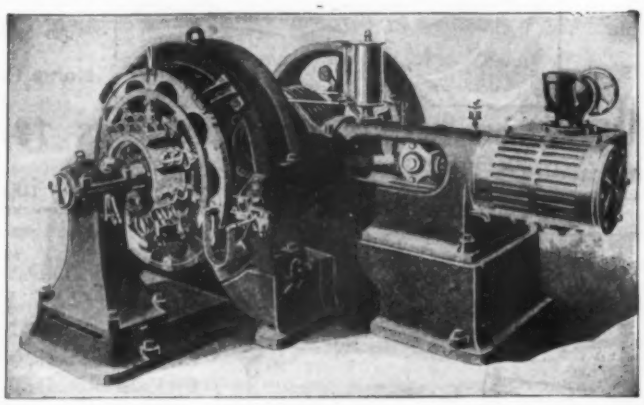

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Hotel Chastaigneray, N. Y.
N. Y. Cotton Exchange, N. Y.
American Linseed Co., N. Y.
Weil & Mayer Building, N. Y.
Lackawanna Valley Light & Power Co.
Erie Railroad (Coal Department).
Wyoming Valley Light & Power Co.
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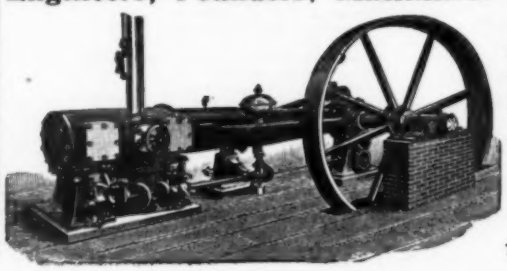

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N. E. Automatic Weighing Machine Co., Boston, Mass.

Well Contractors. (Oil, Artesian, etc.)
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Bacon Air Lift Co., New York, N. Y.
Cook Well Co., St. Louis, Mo.
Gould, F. M., Richmond, Va.
Hughes Specialty Well Drilling Co., Charleston, S. C.
Sydnor Pump & Well Co., Inc., Richmo d, Va.

Well Drillers. [See Well Tools and Supplies.]

Well Tools and Supplies. (Artesian.)
Austin Mfg. Co., F. C., Harvey, Ill.
Bacon Air Lift Co., New York, N. Y
Cook Well Co., The, St. Louis, Mo.
Gould, F. M., Richmond, Va.
Hughes Specialty Well Drilling Co., Charleston, S. C.
Loomis & Nyman, Tiffin, O.
Perry Andrews & Co., Atlanta, Ga.
Sydnor Pump & Well Co., Inc., Richmond, Va.
Williams Bros., Ithaca, N. Y.

Wheelbarrows and Trucks.
Jackson Mfg. Co., Harrisburg, Pa.
Kilbourne & Jacobs Mfg. Co., Columbus, O.

Whistles. (Chimes, Sirens, etc.)
American Steam Gauge Co., Jamaica Plain, Mass.
Crosby Steam Gauge & Valve Co., Boston, Mass.
Lunkenheimer Co., Cincinnati, O.

White Lead.
French, Samuel H., & Co., Philadelphia, Pa.

Windlasses.
American Ship Windlass Co., Providence, R. I.

Windmills.
Flint & Walling Mfg. Co., Kendallville, Ind.

Window Guards. (Wire.) [See Wire Goods.]

Window Frames & Sashes. (Metallic.)
Badger, E. E., & Sons, Boston, Mass.
Smith-Warren Co., East Cambridge, Mass.

Wire Cloth. (Iron, Steel, Brass, etc.)
Burger Iron & Wire Works Co., Akron, O.
Caldwell, H. W., & Sons, Chicago, Ill.
Meyers, Fred. J., Mfg. Co., Hamilton, O.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Goods.
Balderston, H., & Son, Baltimore, Md.
Bolles Iron & Wire Works, J. E., Detroit, Mich.
Burger Iron & Wire Works Co., Akron, O.
Dow Wire Works Co., Louisville, Ky.
Dufur & Co., Baltimore, Md.
Ludlow-Saylor Wire Co., The, St. Louis, Mo.
Meyers Mfg. Co., The Fred J., Hamilton, O.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Netting.
Chandlee Fence Co., Baltimore, Md.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Rope Thimbles.
Jackson Mfg. Co., Harrisburg, Pa.

Wire, Barbed Wire, etc.
Beely, Chas. H., & Co., Chicago, Ill.
Ludlow-Saylor Wire Co., The, St. Louis, Mo.

Wire Rope.
Contractors' Plant Mfg. Co., Buffalo, N. Y.
Fairbanks Co., Baltimore, Md.
Hazard Mfg. Co., Wilkes Barre, Pa.
Leschen, A., & Sons Rope Co., St. Louis, Mo.
Lidgerwood Mfg. Co., New York, N. Y.
Macomer & Whyte Rope Co., Chicago, Ill.
Roebling's, John A., Sons Co., Trenton, N. J.
Trenton Iron Co., Trenton, N. J.

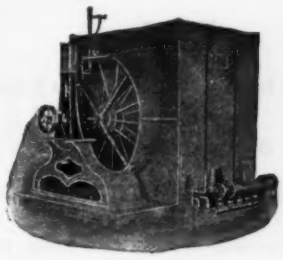
Wire-Rope Tramways. [See Tramways.] (Wire Rope.]

Wrenches. (Drop Forged.)
Atlas Pipe Wrench Co., New York, N. Y.

Woodsplitting Machines.
Trevor Mfg. Co., Lockport, N. Y.

Woodworking Machinery.
Chattanooga Machinery Co., Chattanooga, Tenn.
Coe Mfg. Co., The, Painesville, O.
Cordesman, Meyer & Co., Cincinnati, O.
DeLoach Mill Mfg. Co., Atlanta, Ga.
DuBois Iron Works, DuBois, Pa.
Egan Co., The, Cincinnati, O.
Fay, J. A., & Co., Cincinnati, O.
Frank Machinery Co., The, Buffalo, N. Y.
Gibbes, W. H., & Co., Columbia, S. C.
Greaves, Klusman & Co., Cincinnati, O.
Huther Bros, Rochester, N. Y.
Lane Mfg. Co., Montpelier, Vt.
Root, B. M., York, Pa.
Salem Iron Works, Winston-Salem, N. C.
Shimer, Samuel J., & Sons, Milton, Pa.
Smith Machine Co., H. B., Smithville, N. J.
Trevor Mfg. Co., Lockport, N. Y.

Zinc.
Merchant & Co., Inc., Philadelphia, Pa.
New Jersey Zinc Co., New York, N. Y



The "A B C" Fan System

is pre-eminently the system for heating the large structure, the manufacturing establishment and the public building. It establishes the proper degree of heat, maintains it and distributes it uniformly throughout the building, at the same time furnishing perfect ventilation.

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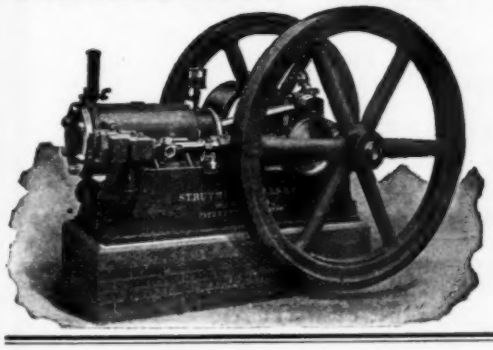

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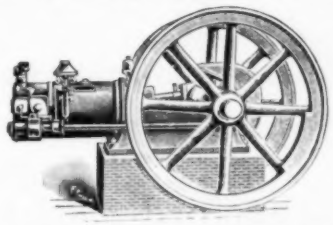
The PAN-AMERICAN Gold Medal, Highest Award at the Buffalo Exposition, falls to "OTTO" Gas and Gasoline Engines.



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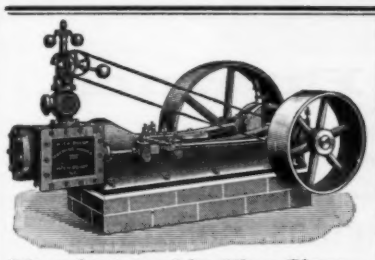

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Improved Bates Corliss Engine

FROM 50 TO 1000 HORSE-POWER.

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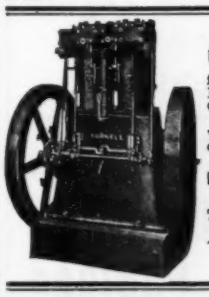
Also full line of Engines, Boilers, Iron and Woodworking Machinery and Pumps. Largest stock of Railroad, Mine and Mill Supplies in the South.



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Gas & Gasoline Engines

from 3 to 50 h. p., for Electric Lighting and Gen'l Power Purposes. Write for Special advertising prices on first engine.

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"Light & Heavy Blacksmith Forgings solicited."

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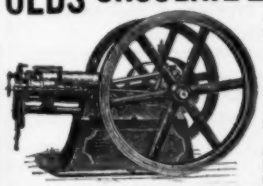

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Kerosene and Gas Engine.

Cheapest power known. Burns Kerosene. Self-Igniting. Simplest engine built. Automatic, simple and reliable. For all power purposes including pumping and electric lighting. Send for Cat'g.

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For every service

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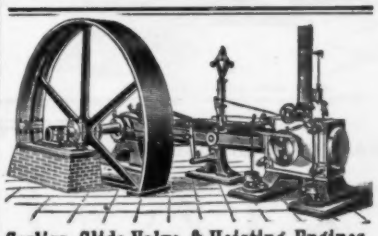

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Tanks, Stacks, Stand Pipes and Sheet Iron Work; Shafting, Pulleys, Gearing, Boxes, Hangers, etc. Mill Castings.
Cast every day; work 180 hands.

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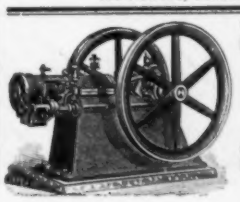

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Engines,

Mill Engines, Electric Light Engines,
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All Types, Sizes and Speeds.

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Inspection and Insurance.

Boilers do explode and cause damage to property and sometimes destroy life or cause personal injury.

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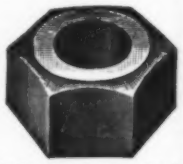

We want your trade in Cold Punched Nuts—Plain, Chamfered, Trimmed and Reamed, Finished and Semi-Finished.

They are made of *Double Refined Bar Iron*, true to size and well finished.

It will pay you to get our prices.

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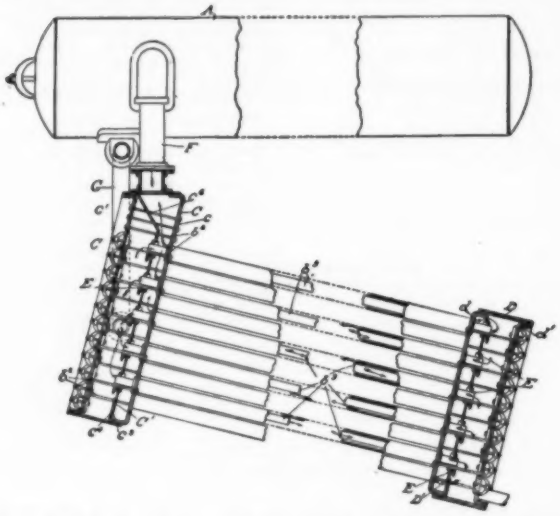
Water Tube Boiler

gives a more rapid circulation than any other boiler. All parts interchangeable and easily removed and replaced. Readily cleaned, and will keep clean longer than any other boiler. Simple in design and construction. Only two



parts in boiler proper. No expert required to set up. The only water tube boiler connected to the steam drum at one end only. *Send for Illustrated Catalog.*

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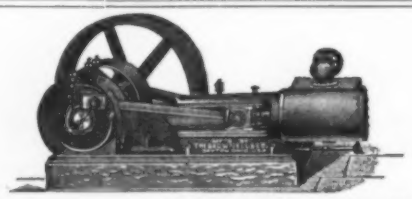

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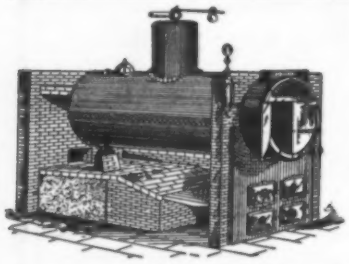

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120-122 Liberty Street, New York,

Begs to announce that it has Removed its Main Office to the Works

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Where all Correspondence should be Addressed.

Rutherford is on Erie Railroad, nine miles from New York.

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BUILDERS OF

St. Louis Corliss Engine.

50 TO 2000 H. P.

Brick Machinery.

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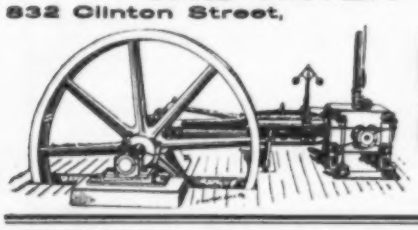

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Safe, Economical, Durable,

Water Tube Boilers.

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Boilers and Engines.

Smoke Stacks, Steel Tanks, Steam Pumps, Feed Water Heaters.

COMPLETE STEAM PLANTS.

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High Standard of Excellence.

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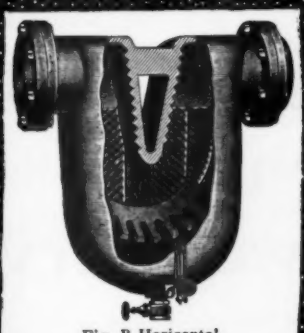
If a Steam Separator Doesn't Separate

all condensation from live steam, and *all* oil, grease and other impurities from exhaust, what earthly good is it?

Austin Steam Separators

do their work thoroughly. Their use means an absolute prevention of all engine troubles due to wet steam and impure exhaust. They save coal, power, money, profanity.

Sent on approval to responsible parties anywhere in the United States, to be returned at our expense if not satisfactory.



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BEST ON THE MARKET.

We furnish complete equipments for Burning Oil—the new fuel for the South and West. We manufacture

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of any size for any purpose.
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INTERNATIONAL BOILER COMPOUND CO. Established 1882.

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Solid, Liquid and Powdered Boiler Compound,

Prevents Corrosions and Incrustations, Removes Scale, Preserves the Iron, Increases Capacity of Boiler and saves 15 to 60 per cent in Fuel.

Satisfaction Guaranteed. Trial Orders Solicited. Write for Prices.

Manufacturers of the INTERNATIONAL COMPOUND FEEDER. | **47 MARKET ST., CHICAGO.**

Fuel Oil

with the proper Burners Furnish the Cheapest Power.

We Manufacture

Burners

that contain

Positive features for the economical equipment of boiler plants.

Can be operated by Steam or Compressed Air.
Does not Clog. Easily Cleaned.
Supply Regulated at point of combustion.

Are a few pointers to the excellence that tests prove our burners to possess.

It means something to say we are the largest manufacturers of Boiler Burners in the world.

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We manufacture Tanks, Pumping Systems, Meters, etc., for Fuel Oil Plants.

Contract to furnish and install all appliances for complete Fuel Oil Burning Plants.

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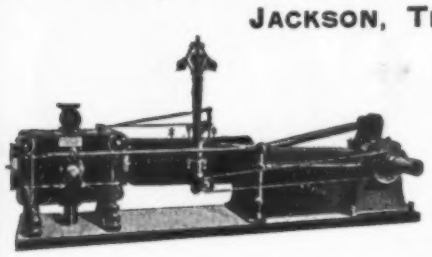

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Slide-Valve Engines, Tubular Boilers and Saw-Mill Machinery.

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Shipbuilding and Dry Dock Co.
WORKS AT NEWPORT NEWS, VA.
(ON HAMPTON ROADS.)
Equipped with a Simpson Basin Dry Dock, capable of docking a vessel 600 feet long, drawing twenty-five feet of water, at any stage of the tide.
Repairs made promptly and at reasonable rates.
SHIP AND ENGINE BUILDERS.
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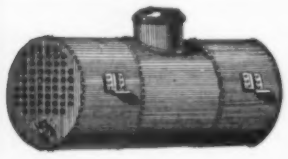

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Boilers, Stand Pipes, Tanks,
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General Steel Plate Construction.
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Gas and Steam Engines.

Gas Engines in sizes up to 650 H. P.

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Write nearest office of Westinghouse, Church, Kerr & Co.

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Westinghouse Multipolar Generator, built especially for lighting and power service.

For Lighting and Power Service.

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Sales Offices in All Principal Cities in U. S. and Canada.

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Complete Power Brake Equipment for Traction Cars.

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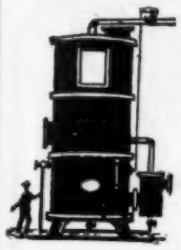

Carnegie Co. has 56,500 H. P.

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Feed-Water Heaters

(OPEN OR CLOSED)

Are bristling with strong, practical points and up-to date improvements. Over 500,000 horse power now in use. Let us send you catalogue and prices.

THE HAWLEY DOWN-DRAFT FURNACE CO.

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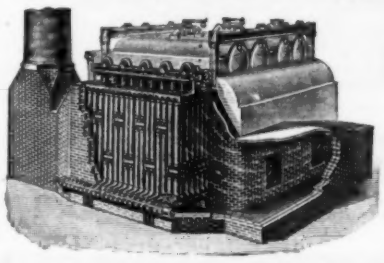
INCREASED STEAM GENERATING CAPACITY.

The Green's Economizer



As a boiler adjunct will not only increase its steam generating capacity, but will decrease repairs. The reserve water heated to 250 degrees prevents unequal expansion and contraction, thus prolonging the life of the boilers and preventing necessity for repairs. See our booklet, "Green's Economizer."

Fuel Bill Decreased 10 to 20 Per Ct.

The Green Fuel Economizer Co.,

Sole Manufacturers in the U. S. A. MATTEAWAN, N. Y.

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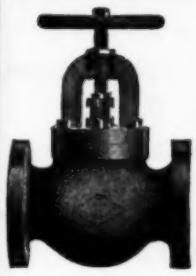
TAUNTON LOCOMOTIVE MFG. CO.—TAUNTON MASS.

FEED WATER HEATERS.
SURFACE CONDENSERS.
EXPANSION JOINTS.



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We Make——

EXTRA HEAVY

Valves and Fittings

of all kinds, and furnish material to sketch for power plants.

We Bend Pipe. Send us your blue prints for estimates.

We Also Make

Separators,

Reducing,
Back Pressure
and Relief

Valves.

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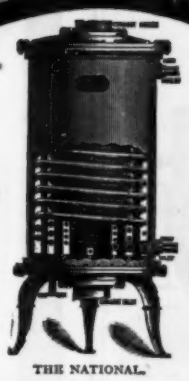
Some Points of Excellence OF THE NATIONAL.



THE NATIONAL.

1,000,000 H. P. In Daily Use.

It delivers water to the boiler at 210° F.
No inside joints to leak.
No straight tubes to leak.
No back pressure is possible.
No contact of water with shell or iron.
No chances of grease in boiler.

THE NATIONAL FEED-WATER HEATER

WE ALSO MANUFACTURE

Coils and Bends

OF

IRON, BRASS AND COPPER PIPE.

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Selling Feed Water Heaters BY MAIL is our specialty.

18 years as sellers and manufacturers is the price we have paid for our experience. Our improved machinery and methods for manufacturing greatly REDUCES THE COST AND YOU GET THE BENEFIT OF IT.

THE IMPROVED BERRYMAN (KELLEY'S PATENT) WATER TUBE

FEED WATER HEATER AND PURIFIER

This heater is designed with special reference to obtaining highest results and greatest durability. All materials are of a quality and weight to successfully withstand years of usage, and workmanship is of the highest grade.

Benj. F. Kelley & Son

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BONAR OIL FILTERS

FOR ALL PURPOSES.

You should see our Gravity Filter (see cut), no waste or any kind of filtering material needed. Sent on 30 days trial.

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Birmingham Boiler Works.

Builders of Stand Pipes, Tanks, Stacks, Ore, Coal and Coke, Buggies, Laries, Lumber Trucks, Tram Cars. A large stock of new and second-hand Boilers, cheap.

WM. CRELIN, Proprietor,

Ave. A, Powell ave. and 24th st., Birmingham, Ala.

Value for Dollars

If we, as the manufacturers of the

Webster Feed Water Heater and Purifier

were paid in proportion to its value, the price would be many times higher than what we charge.

Many hundreds of buyers of the Webster Heaters have realized the return of anywhere from 15% to 75% per annum on their investments.

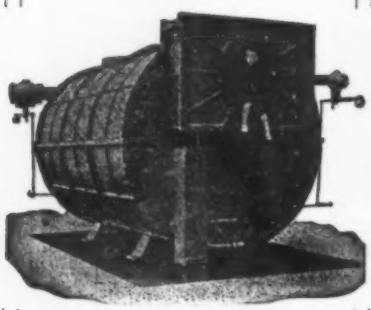
We issue a little book about the Webster Heater that ought to be convincing to any one who owns a steam plant.

WARREN WEBSTER & CO.

Manufacturers

CAMDEN, NEW JERSEY

No Amount of Scale



Horz Cyl. Form Special Design.

that can form within a COCHRANE HEATER can prevent it from heating the water so long as you can get any water or any steam into it. Is this true of a closed heater? The moment you neglect the latter, its efficiency begins to be impaired, while a "COCHRANE" will do its work for days and months—the scale that renders useless a closed heater collecting upon the trays in the "COCHRANE" from which it can be easily removed.

If you want further particulars, write for catalogue "12-H."

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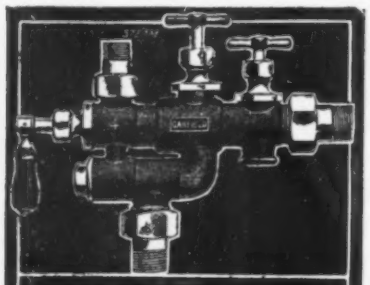
Allegheny Ave. and 17th Street,
PHILADELPHIA, PA.



The Garfield Automatic INJECTOR

Cleans without taking apart. Easy to operate. Without question the right Injector for stationary engines.
Let us send Catalog

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VINCENT GATE VALVES
Have an adjustable wedge and Do Not Leak.
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AULTMAN
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COAL TIPPLES
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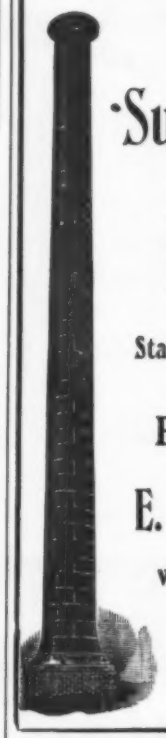

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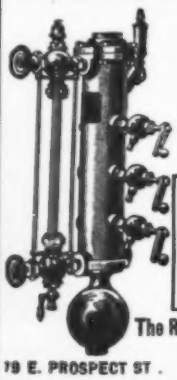

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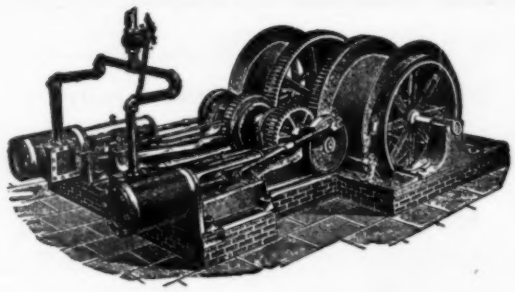

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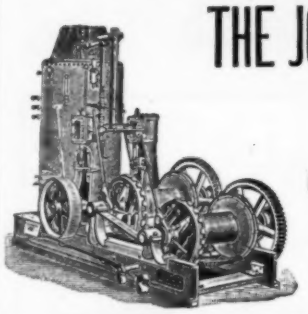

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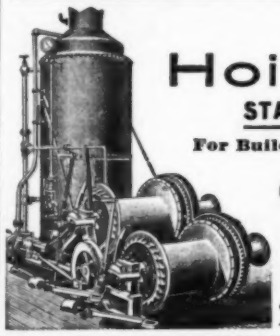

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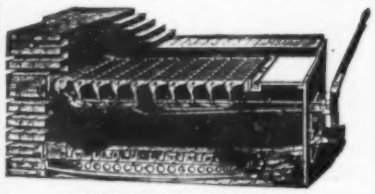
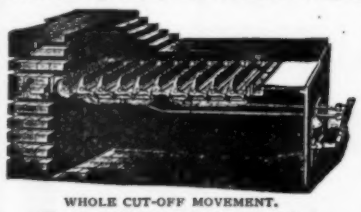


NORMAL POSITION OF GATE.



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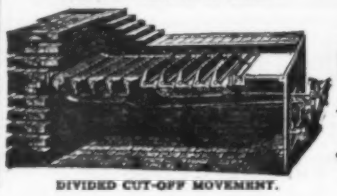

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Cross Sectional View.

These appliances together combine more valuable features for burning the smaller sizes of hard and soft coal, such as Anthracite, Culm, Birdseye, Buckwheat and Bituminous Slack than any other system; while the Grate alone stands unequalled for burning the larger sizes of these fuels with natural draught. The Argand Blower gives excellent results in burning Spent Tan, Sawdust, Bagasse, &c.

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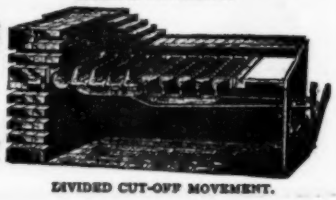

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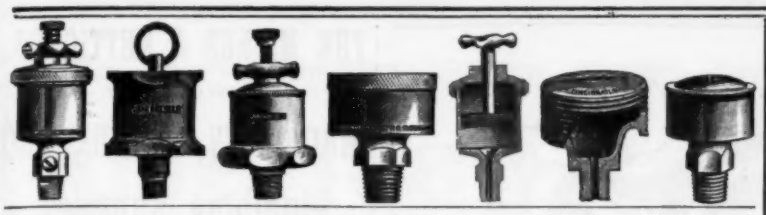

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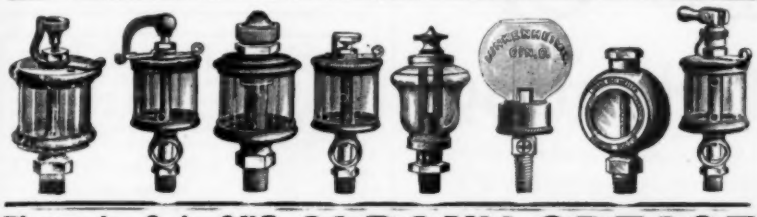

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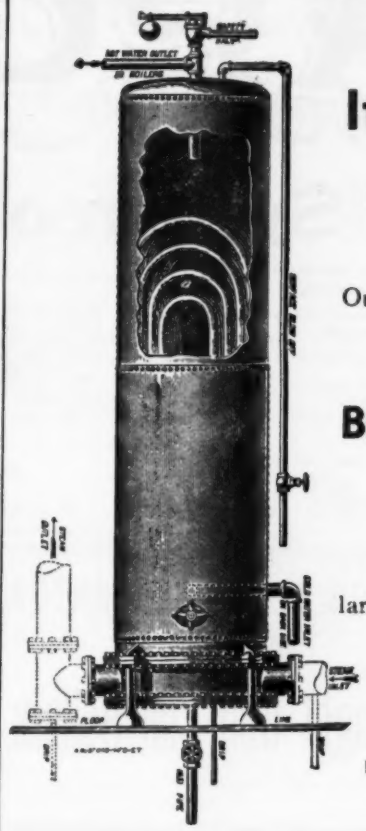

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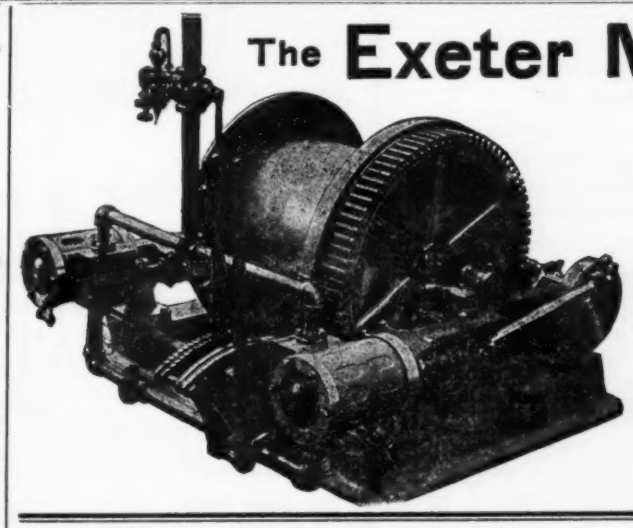

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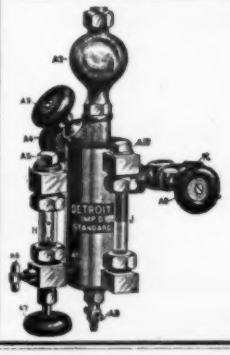

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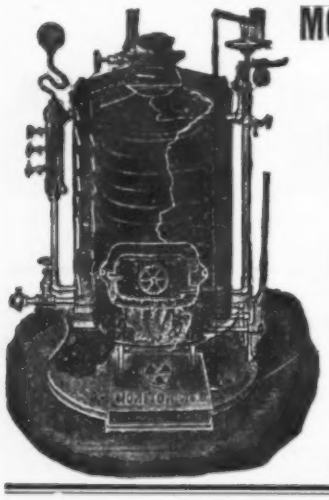

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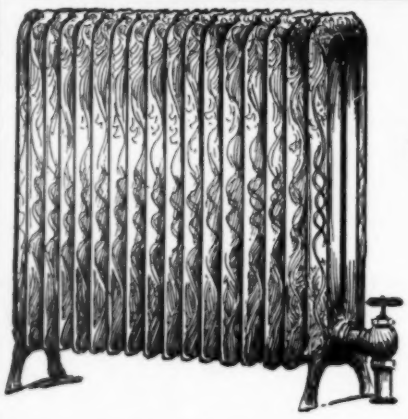

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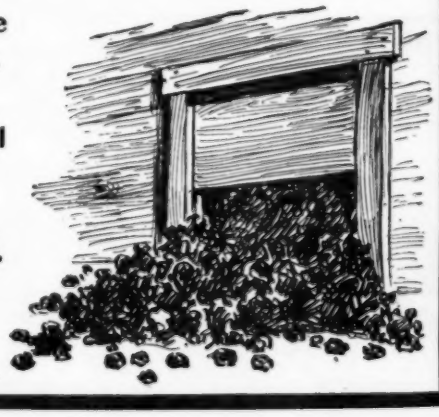

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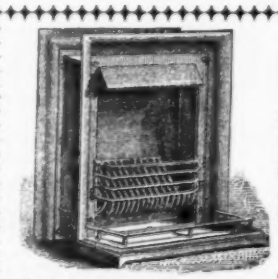

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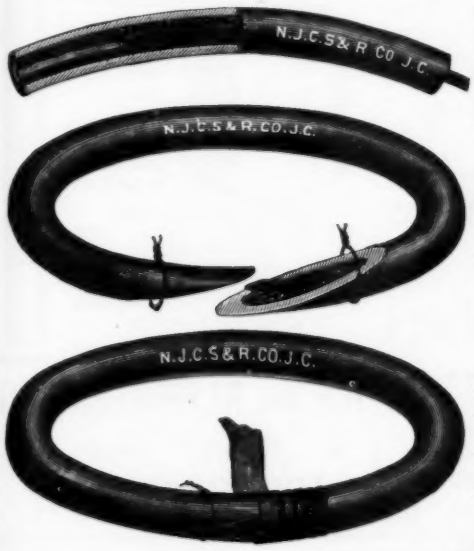

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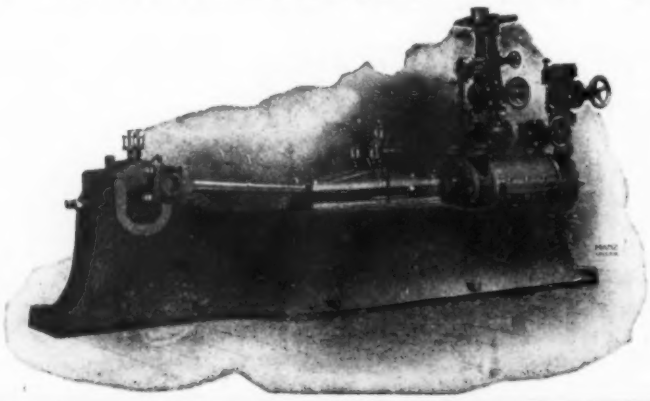

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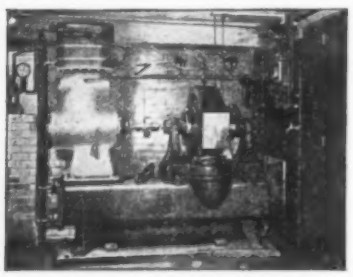

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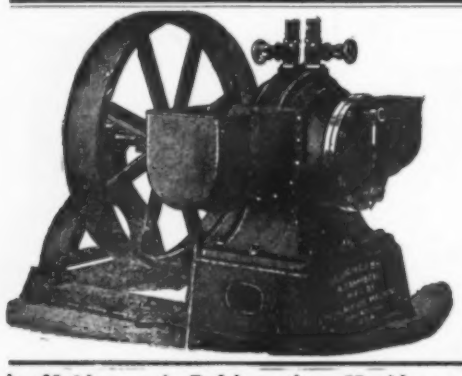

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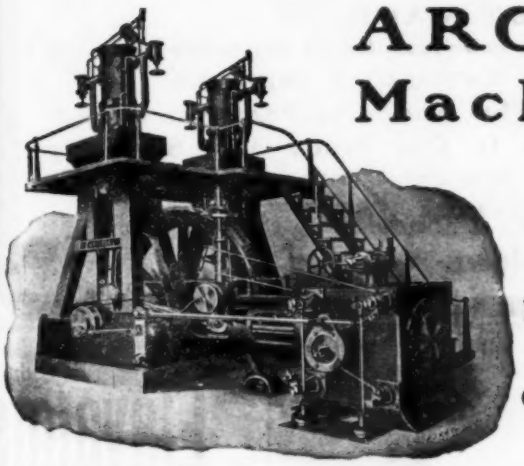

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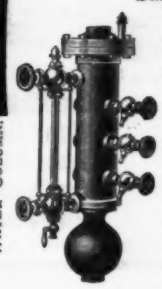

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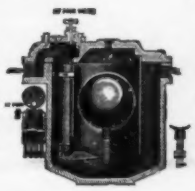

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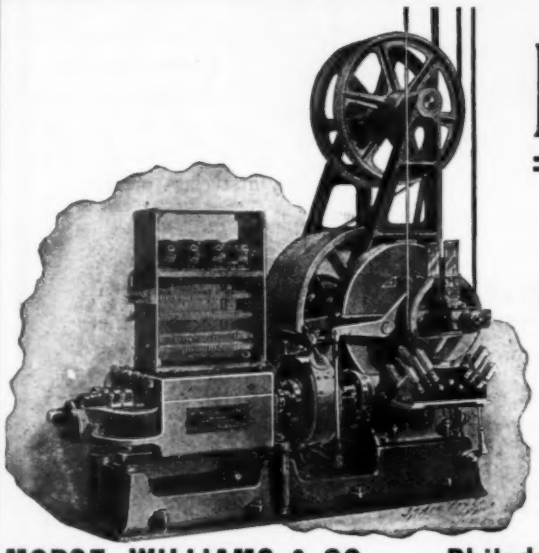

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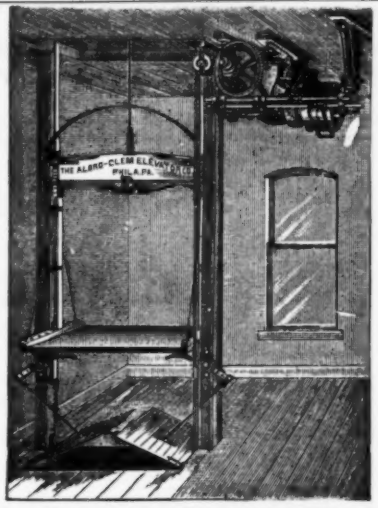

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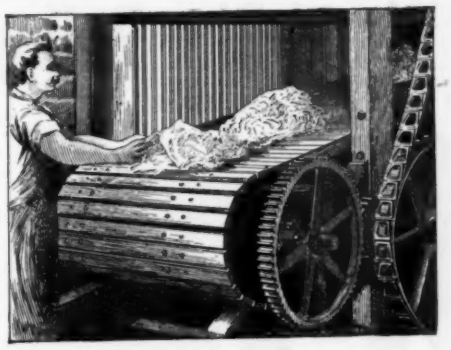

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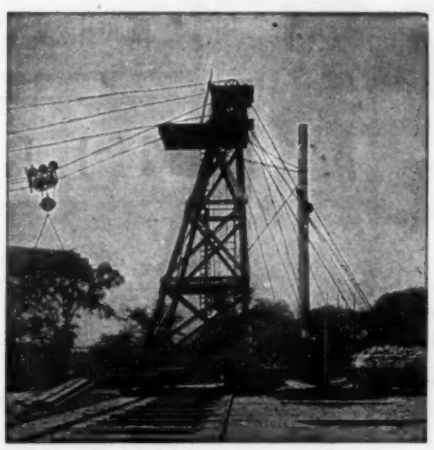

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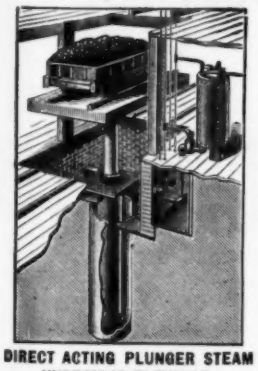

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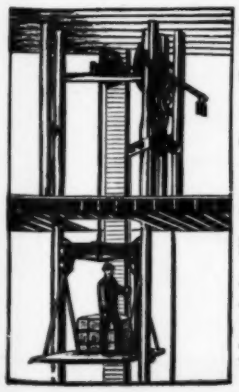

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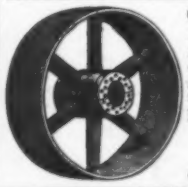

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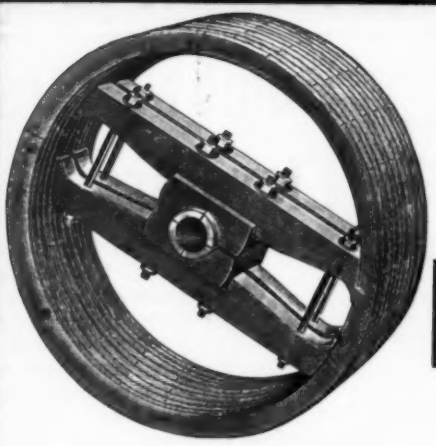

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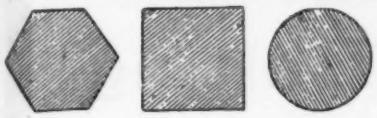

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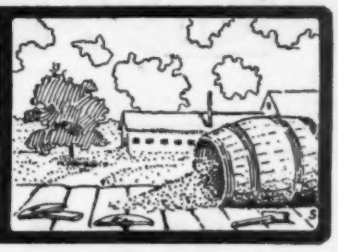

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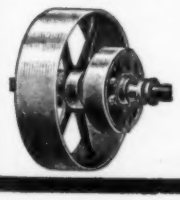

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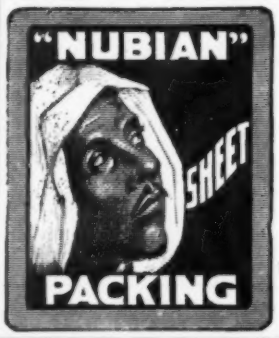

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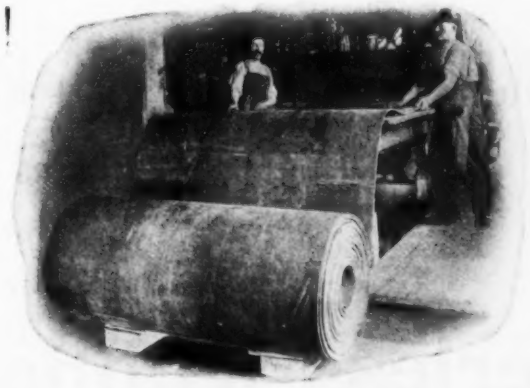

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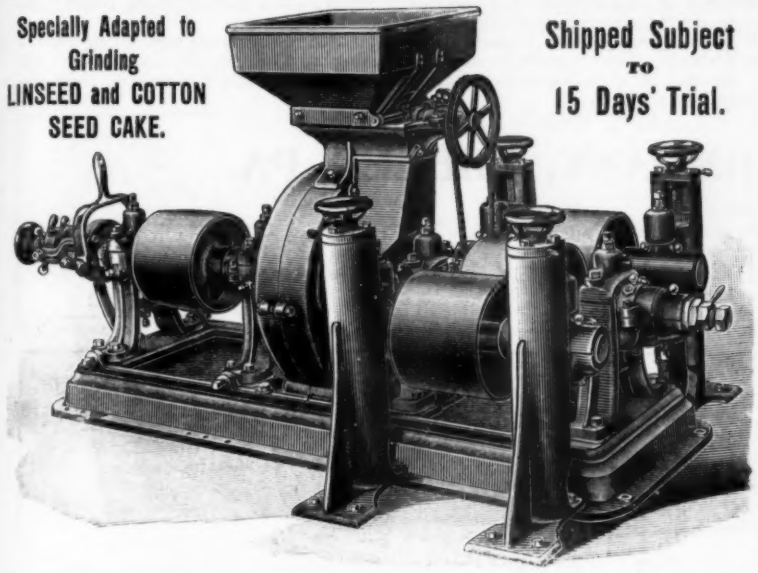

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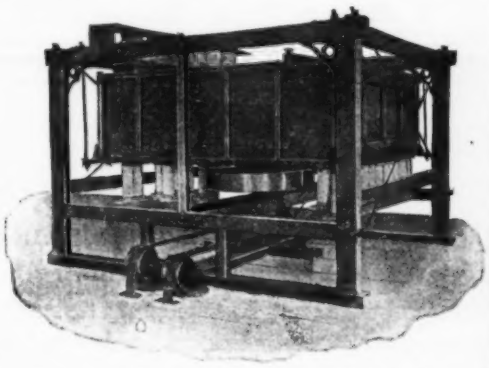

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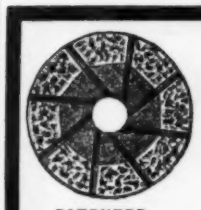

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Important Litigation Relating to Magnesia Covering Patents.

The Keasbey & Mattison Co., the owners of the patents for magnesia covering, have commenced a suit in the United States Circuit Court for the Southern District of New York against the **Philip Carey Mfg. Co., George D. Crabbs, J. E. Breese, Schoellkopf, Hartford & Hanna Co., J. F. Schoellkopf, Jr., James Hartford, W. W. Hanna, C. P. Hugo Schoellkopf and Jesse W. Starr** to restrain the defendants from making and selling magnesia covering for boilers and steam pipes containing more than 50% of magnesia, and especially coverings containing 85% of magnesia.

The bill prays for a preliminary writ of injunction, to be continued during the pendency of the suit, and upon the final determination thereof to be made perpetual, and also demands an accounting and damages.

☞ All persons are respectfully requested to refrain from purchasing covering infringing these patents, as such purchasing must of necessity lead to suit. ☜

Beware of Fraudulent so-called "Magnesia" Coverings as well as those infringing on patents.

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PAGE 58

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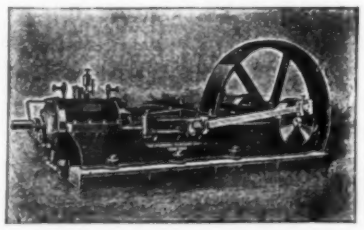

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MANUFACTURERS' RECORD.

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER.

VOL. XL. NO. 16. WEEKLY. | BALTIMORE, NOVEMBER 7, 1901. | $4.00 A YEAR. SINGLE COPIES, 10 CENTS.

Manufacturers' Record.

RICHARD H. EDMONDS, President.
THOMAS P. GRASTY, Vice-President.

OFFICE: MANUFACTURERS' RECORD BUILDING, BALTIMORE.

PUBLISHED EVERY THURSDAY BY THE

Manufacturers' Record Publishing Co.

RICHARD H. EDMONDS,
Editor and General Manager.

THOMAS P. GRASTY,
General Staff Correspondent.

SUBSCRIPTION, - - - - $4.00 a Year.
TO FOREIGN COUNTRIES, - - 26s. 6d. a Year.

BALTIMORE, NOVEMBER 7, 1901.

COPY FOR ADVERTISEMENTS.

Advertising copy (changes or new advertisements) should reach us Saturday Morning to insure insertion in the issue of the following week. For the first issue in the month we should receive copy by Friday Morning of the week preceding.

A Mississippi Worker.

In a letter to the Manufacturers' Record Mr. Edgar S. Wilson of Jackson, Miss., writes:

Permit me to say personally to you what I have said in the Picayune and reiterated it scores of times in different words, to wit: The Manufacturers' Record of Baltimore is the most potential friend possessed by the South. I never let an issue of your magnificent publication escape my scissors. Mississippi is making progress, and is beginning to feel her future. Any help that you can give us will be gratefully appreciated.

Mr. Wilson, as is well known throughout the South, is the wide-awake and alert manager at Jackson of the Mississippi bureau of the New Orleans Picayune. As such he has for several years covered Mississippi from the news standpoint with a thoroughness, broadness and freshness unexcelled in similar correspondence in any other part of the country. At the same time, personally, and through his brilliant journalistic work, he has identified himself and the paper which he so ably represents with all that is making for the material welfare of Mississippi, and it is largely due to the pioneer labor of his pen that so many of the weekly papers of the State have come to the support of measures in politics and in personal endeavor, which, carried into effect, have given Mississippi such a splendid impetus in industrial progress. The Manufacturers' Record has appreciated Mr. Wilson's use of his scissors toward it. He has allowed nothing to escape which, by reproduction in his widely-read columns, can possibly benefit Mississippi, and, unlike a few other scissorers, he has not neglected to give just credit. We have long regarded Mr. Wilson as one of our most effective allies in our work for Southern development, and we take pleasure in telling Mississippians that about the best help we can give that State is to urge its citizens to give greater endorsement than ever to the work which Mr. Wilson is doing.

A Tour of Practical Triumph.

The Good Roads Special train of the Southern Railway was given a great send-off at its first stopping-place, Winston-Salem, N. C. To greet it there assembled representatives of thirty North Carolina counties, and at the meetings held on November 1 and 2 practical speeches were made by Governor C. B. Aycock, United States Senator F. M. Simmons, Mayor B. O. Eaton, Prof. W. A. Blair, Mr. William H. Richardson of the staff of the Good Roads Train, Postmaster C. O. Reynolds, Mr. M. A. Hays, representing the Southern Railway; Mr. W. H. Moore, president of the National Good Roads Association; Prof. J. A. Holmes of the North Carolina geological survey, Prof. George T. Winston of the North Carolina College of Agriculture and Mechanic Arts, Mr. M. O. Eldridge of the government office of road inquiry, and Mr. S. L. Patterson, North Carolina's commissioner of agriculture. Resolutions were adopted urging upon the general assembly of the State the importance of more satisfactory and uniform laws for road-building, and of making such appropriations as will enable the State highway commission to employ well-trained engineers to aid the several counties in the work of road-building and to carry on the good roads educational campaign. A permanent good roads association was organized, with P. H. Haynes, president, and B. O. Eaton, secretary, with vice-presidents for each of the several counties represented. The enthusiastic reception of the Good Roads Special at Winston-Salem is but typical of the reception to be given it all along its route of nearly 6000 miles. In the many cities and towns which it will visit business men and municipal authorities have already united in arranging preliminaries for meetings and for organization of local associations where they do not already exist. The newspapers are full of editorial encouragement, and excellent results may be expected in half a dozen States. For these the Southern Railway is to be thanked.

The President at Charleston

Much gratification is expressed at the fact that President Roosevelt, though unable to be present at the time, will, by means of electricity, set going on December 2 the machinery of the South Carolina, Interstate and West Indian Exposition, and that at a later date in February he will probably visit the exposition. This announcement was made during a call upon him by President F. W. Wagener of the Exposition Company, Mayor Smyth of Charleston and Mr. J. C. Hemphill, manager of the bureau of publicity and promotion. It has been some years since Charleston has entertained a President of the United States and his official family, and the visit of President Roosevelt and his Cabinet will be made one of the most interesting features of the exposition. Plans for the opening on December 2 are working out smoothly, exhibits have begun to arrive, and within two or three weeks the country will have a pretty fair idea of the advantages which the exposition will present for encouragement of relations between the United States and the West Indies and the Central and South Americas.

Simplicity in Land Titles.

On another page of this week's issue of the Manufacturers' Record is published an article by Mr. Charles J. Haden of Atlanta, describing the workings of the Torrens system for the registration of land titles, and pleading for some such simplification in the South. For nearly ten years Mr. Haden's practice has given him an opportunity to understand thoroughly the difficulties connected with the conventional methods of passing titles to land, and he has become an active worker for a reform. He is the author of a bill which he hopes to induce the Georgia legislature to pass providing for the adoption of the Torrens system in that State. There is certainly need for a reform in this particular in the South with the coming there of investors in timber and mineral properties, and it is hoped that the Georgia legislature may set the good example for the rest of its section.

Into the Highlands.

The United States Geological Survey has for several years been engaged in a systematic study of the inland streams of the country with a view to the future development for transportation or industrial purposes of the power in their waters, and it is regarded as within the range of possibility that electricity generated by water-power now running to waste may be used in operating railroads through the mountains. This idea, which seems to have already become popular in the West, is worthy of consideration in the South. In the Southern highlands are great expanses of natural wealth only waiting the coming of the railroad to become available. In the same regions is an immense amount of latent power going to waste. The piercing of the highlands by electric roads operated from these mountain streams might be feasible, and if so, would certainly contribute largely to the expansion of Southern industry.

Fighting for Forests.

If Tennessee is not benefited as a result of the lively movement for scientific lumbering and the preservation of timber resources in the South it will not be the fault of the Tennessee Forest Association. This body, temporarily organized in August, is to meet at Nashville on November 12 to perfect organization and to stimulate wider and deeper enthusiasm in its objects. Already it has secured a large membership, representing many interests in the State, and it is planning for work upon practical lines. The association understands that if the State does not take the matter in hand, not only the hardwoods, which have long been a feature of Tennessee's lumber industry and its manufactures of furniture and agricultural implements, but also other varieties of timber will become extinct through reckless lumbering, waste and fires. The association undertakes to cultivate a public sentiment which will be crystallized into legislation providing for the maintenance of a due proportion of forest area in the State, to disseminate information about the growth, production and utilization of forests by which the persons most interested may co-operate with the State authorities, and also to encourage tree-planting, not merely for shade and for ornamental purposes in streets and parks, but especially for the comfort and beautifying of country homes. The association, of which Dr. B. J. Ramage of the University of the South, Sewanee, is president, and Dr. W. B. Hall is secretary and treasurer, deserves the earnest, practical support of Tennesseans, and its purposes should be extended and reinforced by similar bodies in other Southern States.

No Reason for Excitement.

If the Manufacturers' Record should resort to the methods of criticism of its contemporary employed by the Raleigh News and Observer we should do that enterprising journal an injustice. For instance, we should extract from a remarkable editorial criticism of us the following statement of the Raleigh News and Observer:

"We confess we do not know the meaning of words."

We should proceed to remark that, judging from the way in which the News and Observer has interpreted one paragraph of an editorial which appeared in the Manufacturers' Record recently, we confess that it ought to confess that it does not know the meaning of words.

We know, however, that it does know the meaning of words, and we are generous enough to state that its remarkable attitude can be attributed only to excitement not justified by the spirit which dictated our editorial. To point it to the right position for discovering the meaning of our words, we refer the News and Observer to a speech made at Raleigh on the day before its remarkable editorial was penned. The speaker was President George T. Winston of the State Agricultural and Mechanical College, who dwelt upon the necessity for a more general use of machinery in daily life in North Carolina. Mr. Winston said:

Under our present system of education boys and girls are educated away from skilled labor. How few of them are taught the use of tools, much less of machinery. How few of them can bottom a chair, repair a lock, replace a broken door panel, put a water-back in the kitchen stove, put a new valve in the pump, cut threads on pipe and make joints, sharpen the mowing blade, put a head on a bolt, make a new wagon body, put on a horseshoe, make a new singletree, put in a spoke, put on a tire, replace broken glass, make a new gate, forge an open link, temper steel, build a chimney, draw plans

for a barn, put in tile drains, survey hillside ditches, construct silos, repair harness, and do the thousand and one things that every farmer must do for himself or hire some one else to do for him at very great expense, or, at still greater expense, leaving undone. Instead of learning to do these things, to be skilled with hands, observant with eyes and inventive with brains, our children are given endless lessons in georgraphy and history and rhetoric and literature—lessons which they learn with difficulty and forget with ease. They must memorize the names of all the rivers, gulfs and bays, capes and promonotories on the globe, the ancient rulers of Egypt and Assyria from the earliest dynasties to as recent a period as the reign of Asur-ban-i-pul. They must learn the number of elephants in the battle of Zama, the defects in the Pandects of Justinian, the religious doctrines of Zoroaster, the difference between synedoche and hyperbole, the psychological dependence of Shakespeare upon Beaumont and Fletcher, the practical value of transcendentalism, how to spell without spelling, how to read without seeing the words, and how to figure without using figures.

The great ambition of our boys is to speak orations and of our girls to read essays at commencement. A few years ago I was present at the commencement of an academic institute with seventy pupils. Everybody appeared on the program once, half the school twice, and a large number thrice or four times. There were seventeen original orations (compiled from various sources), twenty-three dialogues (mainly promptings by the teacher), thirty-five essays (which the pupils did not understand well enough to read correctly), nine vocal solos, seven duets on the piano, two quartettes with harmonicum accompaniment, a senior class song and two choral symphonies by the entire school. There wasn't a girl in school that could broil a beefsteak properly, make a perfect loaf of light bread and cut, fit and make a complete outfit of women's clothes. There wasn't a boy that could mend a broken trace chain, put a spoke in a wheel, manage a harvester, tend a dynamo or give any information concerning the markets of the world, the condition of the world's leading crops, the great lines of transportation or the status of labor. The whole affair was ludicrous and pitiful. It was unpractical, unreal, uninteresting, superficial and artificial. The only natural things that I saw, the only real things, were the boys and girls smiling at each other as they blundered through their silly tasks, the babies sleeping in the arms of tired mothers, and a couple of dogs, worn out with the endless performance, seeking recreation by fighting under the benches.

We are so unfamiliar with machinery, skilled labor and technical knowledge that many of our leading men, even our leading educators, regard industrial education as a fad or a sham. Let them open their eyes and contemplate the present and the future, instead of gazing forever at the past. Let them behold the little State of Massachusetts, with more institutions for industrial education than the entire South; let them see her textile schools, her schools of design, schools of art, schools of technology, manual training institutes, trade schools, polytechnic institutes, schools of applied science and institutes of technology; let them see industrial departments in all her city schools, and her entire public-school system made strong, practical and profitable by industrial instruction alongside of literary; let them learn that manual skill, technical knowledge and industrial proficiency cannot be acquired by accident, by instinct or by borrowing, but must be wrought out by the same systematic, persistent and intelligent education as is requisite for literary skill, scientific knowledge and mental proficiency. Let them look closer home, and see in Hampton Institute, Virginia, and Tuskegee Institute, Alabama, larger provision for the industrial education of negroes than is furnished by the entire South for the industrial education of whites.

We hope that the extract from President Winston's address will indicate the point toward which we were striving in the editorial, and bring back our valued contemporary to the hearty support of the Manufacturers' Record in its work for the white people of the South. It is time, for the good of the South, for those who undertake to speak for the South to cease to criticise statements as to facts in the South, however unpleasant those facts may be, and to unite in the effort to change those facts.

That is about all we have to suggest at present.

Georgia's Clays.

Senator Roland Ellis has introduced in the senate of Georgia a resolution directing the State geologist to report to the general assembly as soon as practicable during the present season upon the nature, character, extent and value of the deposits of kaolin and other commercial clays in the State, and upon facts bearing upon the feasibility of adding to the State School of Technology a branch charged especially with training for the development of the kaolin industry. This resolution is a step toward the consummation of a movement begun a few weeks ago at Macon for the establishment there of a school calculated to induce the utilization of the great deposits of kaolin and other clays of Bibb and adjoining counties. Advocates of the plan are convinced that these deposits are a source of immense wealth if they are properly handled, and the estalishment of the school is designed to give Georgia the full benefits of their possession.

Gulfport's Prospects.

The deep-water meeting held this week at Gulfport, Miss., will not only interest the progressive citizens of inland counties of Mississippi in the development of that deep-water harbor, but will call attention to the rapid growth of Gulfport itself. Within the past two or three years it has grown from a mere village to a thriving place of 2500 inhabitants, with a steady demand for more residences. This growth is the result of the construction of the Gulf & Ship Island Railroad, connecting the capital of the State with deep water, where natural harbor advantages have been enhanced by engineering. When the safe and commodious character of the harbor and its accessibility from the timber regions of the State are considered, the future of Gulfport has a promise strengthened by what has already been accomplished.

Freak Legislation.

The Savannah News is eminently correct in the sharp criticism which it makes of two freak bills which have been introduced into the Georgia legislature, one making it unlawful for any railroad to run a regular train as an excursion train, and the other compelling railroad companies to have a conductor for every car of an excursion train. The News does not expect these bills to become law, but it is right in protesting against their introduction. The fact that they are introduced is likely to give a wrong impression about conditions of public opinion in Georgia which can result only in injury to the State.

Not for the Miners' Good.

John Mitchell, president of the United Mine Workers of America, is quoted as announcing at Huntington that in West Virginia his organization is rapidly growing, and that he hopes to establish the same conditions there that exist elsewhere. For the good of the mine workers of West Virginia it is hoped that President Mitchell has been misinformed. The miners of West Virginia will certainly be objects of pity if conditions in that State are brought down to the plane of conditions in Pennsylvania and other older coal-mining States.

The sales in the Joplin (Mo.) district during the week ended November 2 were 10,618,330 pounds of zinc ore and 1,770,830 pounds of lead ore, valued at $178,725.

PROGRESS AT SOUTHERN PORTS. VII--CHARLESTON.

By A. W. Simpson, Jr., of the Charleston News and Courier.

[Written for the Manufacturers' Record.]

Charleston's business outlook is bristling with more glittering possibilities than at any other time in recent years. In commercial and industrial lines there is a future which means much at the beginning of the new season, and conservative business men believe that within the next twelve months the city will accomplish more than in many of the successful years lately closed. With an official chart showing twenty-nine feet of water on the bar, with the first work on a big dry-dock and navy-yard to cost more than $6,000,000, with the opening of the South Carolina, Interstate and West Indian Exposition in December, and with encouraging reports from all branches of trade and commerce, there is naturally a feeling of satisfaction among all classes, and great things are expected from the old city during the year.

The establishment of the naval station will bring lasting and ever-increasing benefits to the port. It will put this port in the front rank, and will be the means of opening channels for export trade and creating industries which will follow the big work of the navy. The steady improvements which have been made in the harbor have brought "deep water," and the clear 29-foot channel will be deepened before the ships of the navy will come here for repairs. The navy-yard proper will be the largest and best on the South Atlantic coast. The plans have been drawn, the details satisfactorily arranged, and active construction will begin by November 1.

While the approaching exposition has caused a tremendous increase in the business of the city, there is the hope that this will continue, although this booming trade is not essential to the continual welfare and progress. The wholesale business has increased at such a wonderful rate within the past year that Charleston is able to command a strong position with the interior, and the big shipments from here testify to the steady business gains. The railroad rates have at last enabled the merchants to compete with larger Southern cities, and the wholesale trade has jumped forward, and retains its firm hold.

Business men are now considering the project of establishing a direct steamship line with Philadelphia, and the steps already taken in Philadelphia give indications that it will go through. Another steamship line between Charleston and the East is needed, and there are reasons to think that it will pay. Within the past year the increasing business of the Clyde's New York-Charleston-Jacksonville line has made two additional steamers imperative, and the Arapahoe and the Apache have joined the fleet. But even with the new vessels the freight accommodations at times are taxed. Direct railroad connection is made here, and trainloads of freight from the Clyde liners are shipped to all parts of the South. The fact that freight from New York to Tennessee, Mississippi and other States can be shipped by water to Charleston, the distributing point, and then sent out from here by rail, is indication enough that the rates are helping the city.

Wholesale and retail dealers in all lines of trade say that the season, which has now fully opened, is the best for years past. The lateness of the cotton crop has not handicapped the business here, and the rapid gains have spread a better and more secure feeling. There are so many agencies at work for the upbuilding of Charleston that new enterprises are being encouraged, and more money is being put out into industrial schemes which will redound to the good of the city.

The imports in the twelve months ending with last August were valued at $1,681,580, and the exports at $7,084,215.

The total number of vessels arriving at the port during the year was 711, against 723 the year previous. Of this number eighty-eight were foreign and 623 American. The total net registered tonnage amounted to 996,498, against 986,793 tons last year. The vessels have been classified as follows:

	Foreign.	American.
Steamships	80	404
Barks	2	4
Schooners	6	215
Total	88	623

This table does not include steamers running to the ports of South Carolina, or schooners under 100 tons register.

The mining of phosphate rock and the manufacture of high-grade fertilizer is the backbone of Charleston's export trade. Figures which have been carefully prepared show that Charleston is the largest manufacturing center of commercial fertilizers in the world, and the business appears to be steadily increasing. The past year was not so encouraging for the miners of phosphate rock, the figures showing a falling off in the rock business at Charleston of 60,165 tons as compared with the previous year, but there was a comfortable increase in the output of commercial fertilizers of 53,064 tons at this port. The Charleston production of fertilizers last year was 429,378 tons, as compared with 376,314 tons the previous year. This increase, represented in dollars, was $636,768, and the local managers say that the indications for the next year are most encouraging. There are not as many independent companies interested in this active and important industry as heretofore. All but four of the companies (the Ashepoo, Etiwan, MacMurphy and Read) are owned and operated by the Virginia-Carolina Chemical Co. The independent companies passed rapidly into the hands of the syndicate, although the four remaining are prospering. The Read Company is building an additional plant, and is preparing for more extensive manufacturing. The Virginia-Carolina syndicate controls the enormous movement here, and by purchasing the numerous independent plants is able to handle the market. The last big deal by this syndicate, the purchase of the plant of the Charleston Mining & Manufacturing Co., was the most important, as it gave control of the valuable mining fields, where the supply is unlimited. Experts declare that new companies which can manufacture fertilizers in 200-pound sacks for export will find the investment profitable. The railroad facilities for transporting the manufactured article are unsurpassed, and this city is able to turn out 500,000 tons with the same ease that it manufactures a smaller amount. The following figures will show the last five years' shipments and sales of fertilizers at Charleston: 1897, 374,494 tons; 1898, 437,138 tons; 1899, 332,912 tons; 1900, 376,314 tons; 1901, 429,378 tons.

To supply the heavy demand during the rush season the Charleston plants are forced to operate a day and night force, and in the midst of the movement the railroads are taxed to make schedules, for the reason that such big shipments are dumped at once.

The rice crop is another valuable industry, and practically all the fields in

this State are controlled by Charleston, the movement being through this port. The weather conditions, which govern the crop, have been comparatively good thus far, and a fair crop will make a good yield.

The following table shows the exports of rice from Charleston, as well as the shipments by rail and the home consumption, for the past two years:

	1899-1900. Brls.	1900-1901. Brls.
North by steamer	20,716	6,948
Interior by rail	37,969	38,098
Total exports	58,685	45,046
Total receipts at Charleston from September 1 to August 31	77,463	60,450
Total shipments	58,685	45,046
City consumption	18,778	15,404
Total	77,463	60,450

The number of casks of turpentine that Charleston received during the past year exceeded that of the previous twelve months. The receipts of rosin were somewhat smaller than for the corresponding period of the previous year. All of the finer grades brought higher prices. On the whole this business has held its own, and there are brighter indications for the new commercial year.

In the export lumber trade the past year was slightly behind the record of the previous twelve months. The grand total, including foreign and coastwise shipping, for 1900-1901 was 57,464,166 feet, against 60,937,705 feet for the season of 1899-1900. The tremendous lumber movement from Georgetown, where the Atlantic Coast Lumber Co. operates its gigantic plant and its own line of steamers, has cut deeply into the business at Charleston. Recently there have been many rumors afloat to the effect that because of the splendid water facilities here the Atlantic Coast Company would transfer its plant to Mt. Pleasant, just across the bay from Charleston, and that a railroad would be built from Mt. Pleasant to the heart of the timber lands. While this report has never been confirmed or denied, business people here believe that in time the company will be forced to seek better port facilities than are offered in Georgetown.

The decrease in the amount of lumber exported during the past year was due to the heavy local demand, a big amount being used for the exposition buildings and other structures in the city. So it will appear that while the exports were smaller, the receipts were larger, and more building was carried on here than for the year previous.

At a cursory glance the cotton figures for the past year are not encouraging. The Carolina crop was short, and the mills, which dot every section of the State, consumed vast quantities of the staple. Many of the mills had orders six months ahead, and there was a rush to seize the State's crop. This season, however, Charleston buyers have been sent to towns and cities not heretofore included, and expert cotton men say that the receipts for the coming season will run 100,000 ahead of last year. This is not put forth in the shape of an idle boast, but is based on careful estimates, which will hardly go wrong. During the past year Charleston received 236,137 bales of cotton, as against 266,896 the year before. The exports were 234,000 bales, against 254,059. The stock was 3348 bales, against 1215. The exports to Great Britain were 70,337 bales; to the Continent, 70,152; inland shipment, 7464; coastwise shipment, 84,205. The local manufacturing concerns consumed 1806 bales.

The report of the Sea Island cotton crop for the year ending August 31 shows an increase of 792 in the number of bags raised near Charleston.

With three big railway systems offering splendid facilities for the port, Charleston is still grasping and is making earnest efforts to secure the Seaboard Air Line. From Augusta, Ga., the line has already been surveyed for the Charleston, Augusta & Chattanooga Air Line, a Seaboard connection, and the next sixty days may determine finally whether this will be built. The positive assurance is given that the road will be extended to Charleston, and negotiations are pending which may prove profitable to the city. The Seaboard owns valuable terminal properties here, and, according to common report, has been negotiating for the purchase of the Louisville & Nashville terminals, about the best at the port. Plans for the union passenger station have already been drawn. The entire structure will cost $200,000, and the charter has been issued. Charleston has suffered in late years for lack of proper depot facilities, but the improvement is in sight, and this union station is one of the prizes which will be won with the beginning of the new commercial year. It has been officially announced that the depot question will be settled early in November.

A big inducement for the Seaboard Air Line to enter Charleston would be the tremendous fertilizer traffic. The men behind the fertilizer syndicate are largely interested in the new Seaboard venture, financially and otherwise.

All of the terminal properties here have been improved, and the Southern Railway is especially well equipped for the handling of export trade.

With the aid of a large amount of Baltimore capital Charleston owns and operates an excellent railway system. Every available street is covered; there are lines running nine miles to the Isle of Palms, and other lines to Chicora Park, where the navy-yard will be located, and a branch line was recently extended to the exposition grounds. All of the railway, gas and electric plants are now controlled by the one company, the Consolidated, and an up-to-date service is provided.

On Sullivan's Island, a suburb of Charleston, army barracks are being erected at a cost of more than half a million dollars. The island will be made one of the most important posts on the South Carolina coast, and will represent to the army what the magnificent dry-dock at Chicora Park will to the navy.

According to the last census, the population of Charleston was about 55,000, but this count has not been accepted as entirely correct. The board of health figures show a larger population. A fact which has worked against the commercial advancement of the city is the very large negro population, but the business people have realized that this can no longer be allowed to militate against progress.

During the fiscal year just closed the demand for real estate has been better than for any single year previous. The opening of the exposition and the building of the big naval station have helped to increase this demand, and the hope of the brokers is that the demand will remain when the exposition is closed. New buildings have been erected, old properties have been improved, and the difficulty in securing houses is the best evidence that the demand is strong. A most encouraging sign of the increased business among the wholesale merchants is found in the new establishments which have been erected. The retail dealers have found it necessary to follow this rapid improvement pace, and outwardly the city shows an indication of renewed life.

The assessed value of real and personal property returned for taxation for 1900 was: Real estate, $12,338,143; personal property, $4,907,999; total, $17,246,142.

The tax assessment is 29½ mills. Compared with the previous year, the real-estate assessment shows a decrease, while there was a decided increase in personal property. During the year the books showed that the sum of $158,365 was expended in new buildings and in improvements on those now standing.

In the banking field Charleston is exceptionally strong and healthy. There are sixteen flourishing banks in the city, with a total authorized capital stock of $3,010,000, and deposits in the savings departments are enormously heavy, and in most instances the deposits run far ahead of the capital stock. About two years ago, when the banks were flooded with so much deposit money, it was agreed to reduce the rate of interest from 4 to 3 per cent., but this had no visible effect, and the rate now has been restored. The safety of the banks has been tempting to depositors, who preferred to put money there than to invest it in industrial enterprises, and the city has been hampered more or less by this fact. The list of building and loan associations has increased wonderfully within the past twelve months, and many homes have been purchased through them.

Within the year Charleston secured excellent hotel facilities, and while two of the best new houses are not open yet, they will be ready for business by November and December. The need of better facilities in this line have long been realized. The St. John's apartment-house, a five-story building, will be ready for the opening in December, and for the first winter it will be operated as a modern hotel. After that it will be converted into an apartment-house. The Argyle is another structure which will be open in December, and many smaller houses are coming to the front. The plan for the tourist hotel on the Battery has not been abandoned.

The Charleston Bag and Yarn Manufactory has erected a three-story brick plant in Charleston, and will manufacture seamless bags and kindred articles. This company has been operating successfully here for a number of years, but the increased business made it necessary to get another establishment. Homes for operatives have been built, and the mill will employ two hundred or more helpers.

The government improvements at the port have had a splendid effect, and has kindled new interest in the progress of Charleston. In addition to the navy-yard and army post on the island, a torpedo station will be added, and a lighthouse supply station on Castle Pinckney is an innovation. The recognition of the port by the Navy Department has induced a large amount of outside capital to seek Charleston investments.

The list of new corporations and the list of increased capital stock indicates a marvelous business gain, and surpasses all previous records. These new business institutions include every branch of trade and industry. The wholesale dealers, who have bought heavy stocks for the winter, have increased the number of traveling salesmen, and fields not heretofore covered are being successfully worked. Not a few of the wholesale dealers have established direct trade with West Indian points. The commercial agencies make fine reports of the sound business foundation here, and by these agency reports it is clear that Charleston is far on the road to commercial supremacy. There is not a dark cloud on the commercial sky.

SIMPLIFICATION OF LAND TITLES.

By Charles J. Haden.

[Written for the Manufacturers' Record.]

The present system of land titles is unfitted to our commercial age. The realty laws of the several American States are modified transcripts of those of England of the eighteenth century. The principles of public policy upon which ancient land tenures were based exist no longer. The social structure which demanded that the soil be anchored in the first-born male and his issue has been stricken and declared by the court crier as null and void and un-American, yet its skeleton encumbers the whole northern half of the Western Hemisphere.

A steamer sails from Savannah laden with a cargo of cotton worth $100,000, bound for Liverpool, and the title to its entire freight is centered in and is conveyed by the delivery and endorsement of a bill of lading. The change of ownership is instant; the money and the written evidence of title exchange hands in a minute of time, and the transaction is forever closed.

The Savannah merchant wishes to sell a tenement-house in the back districts worth $500. First, the abstractor runs back the record of every court of record, State and federal, all registers of deeds, of mortgages, of liens, general and special, of tax returns and payments, inquires if the seller is married or single, or is divorced or is living tentatively apart from his wife, the files of fiscal bonds, State, municipal and federal, enters all flaws, actual or apparent, and then turns an elaborate abstract over to the lawyer. Then the lawyers are confronted with a series of situations running back forty or fifty years, often much longer, many of which transactions occurred under statutes long since repealed or decisions that were overruled before he became a practitioner. He must pass judgment upon the titles as a whole, and be financially bound by the accuracy of his judgment. It may be, and usually is the fact, that the abstract before him has flushed a score of legal doubts, any one of which under the judicial searchlight would be subject-matter for hard fighting. Finally the title is approved, the merchant executes a deed with a warranty clause binding "himself, his heirs, legal representatives and assigns to forever warrant and defend" the title to the property conveyed. Thenceforth not only during his natural life, but so long as his property or money can be traced into the hands of child or grandchild, that warranty is a living obligation and a peril to his successors in estate.

Among laymen an impression prevails that a certain prescriptive period, seven, ten or twenty years, varying in the States, heals defects. But the lawyer knows that this prescription is of no avail as against minors, insane persons and others under legal disqualifications. Instances are by no means infrequent where fifty or sixty years, or in rare cases more than a hundred years of actual possession failed to ripen the title. An old Boston conveyancer once rightly remarked that he had found perfect titles as plentiful as perfect men. And when it is considered that a great portion of the South's wealth is in forest and mine and quarry, where no actual possession has been established—where the title rests solely upon a paper chain reaching back to the state in which a single defective link severs the right of ownership—the subject becomes serious.

Nearly every State or country has experienced land troubles in their pioneer period. Inaccurate surveys, changing landmarks, neglect by early owners, a feeble perception of the exclusive right of ownership in land of men of the type of Daniel Boone and Lewis Wetzel partially explain the source of the entanglements. The English law, where every precious acre was identified by a hedge row or stone wall, applied to a vast wilderness in America, was a misfit. The South is now handicapped by the blunder.

I am greatly impressed by the Torrens land registration system as a curative measure. We are indebted to Australia for this, as well as for the silent and secret ballot, perhaps the two most valuable legal reforms of the closing years of the last century. The Torrens system provides, first, that the title be filtered and the exact status of ownership be fixed; second, that this filtration, once done, the title begins substantially anew, and back of it no raw material for litigation survives; third, that thereafter the record of the title shall be kept promptly posted up to date, as though it were a banker's deposit ledger. The procedure necessary to the first step must be adjusted to the constitution and judicial machinery of each State. The examination and certificate of title must be by a court or a board possessing judicial powers. The method resembles very much a bill of peace filed in the federal court to determine title. All parties whomsoever known or believed to be concerned in the title are made parties by service of process, and an advertisement is also published in the newspaper which publishes the legal advertisements for the county. When the court or board take up the application preparatory to passing on the title, all persons concerned, or who desire to be concerned, may appear and plead, or, failing to do so, are concluded by the judgment. The finding of the board or court is like the finding of a special verdict by a jury, and upon this finding the clerk (usually the regular registrar of the county) issues a certificate of title to the true owner, certifying to that fact, and noting on the certificate all limitations, contingencies, incumbrances and other like notations that are material to the title. A book of record provided for the purpose is deemed the original of such certificate, and a transcript thereof upon a blank (lithographed and resembling a fire insurance policy) is issued to the titleholder. This certificate is assignable in practically the same way as is a fire policy or a certificate of stock in a corporation.

Thereafter parties taking mortagages, liens or like instruments, or taking judgments which affect the title, are required to have them entered on blanks on the margin or subjoined pages of the original book of registry. Thus the world can at a glance discover everything that the law puts the world on notice of. In like manner subsequent conveyances must be noted on the registry. Each title or assembly of titles of each tract thus stand on the registry, practically photographed, singly or in groups. The abstracter has before him all the facts with which he needs to deal; they go back only to the filtration judgment. The certificate is a mile-post which notifies the abstracter that the rear end of the road is closed against secret equities and kindred perils that lie in ambush.

Controversies over titles frighten away investors. The man who digs coal, quarries slate or cuts timber wants to know that he can do so in peace. If litigation must be had, let it come in advance, before he has planted his money, and not at a time when his industry is thereby put in jeopardy. He wants a title, not fragmentary links of paper which may or may not evidence his right to dominion over the land, according to the prejudice of the jury. The welfare of the State is deeply involved in the certainty of land titles. The facilities offered by the large abstract companies in the cities, insuring titles, do not exist in the country towns. If upon no other than the broad moral ground that the right to tax carries with it the obligation to protect, then the State is bound to give to its citizens that sense of repose in the enjoyment of the soil that they have in the enjoyment of personal property.

Four States have adopted the Torrens system, among them being Illinois and Ohio. I studied the workings of the system at Chicago during the past summer, and the views herein expressed are in line with the Illinois statute. The large Eastern loan companies accept the title certificates in Cook county as conclusive on the question of title, and the expense of obtaining loans and making sales have been greatly lessened.

The system is an ill wind only to the lawyer, but his welfare is not the subject-matter of any orthodox political economy which has yet found public favor.

TO OPERATE IN GEORGIA.

A Big English Corporation in the Cattle Trade.

A few weeks ago, in renewing his subscription to the Manufacturers' Record and changing his address from London to Atlanta, Dr. John A. Harriss wrote: "It gives me pleasure to express to you that your valuable paper on Southern industrial, railroad and financial news has been of untold service to me in England, in addition to its ever-interesting, general, concise items. Its present high position among the world's many thousands of such publications marks out its future as the foremost paper of its kind."

Since that was published Dr. Harriss has been at work in Georgia, and results of his investigations there are seen in the announcement that the British Southern States Cattle Abattoir & Produce Co., Limited, organized by British capitalists, together with Col. Henry J. Lamar of Macon, will operate its American business in Georgia. The company proposes to slaughter cattle, to can fruits and produce and to operate refrigerating plants. A dispatch from Atlanta says:

"The organization of this company means a great deal to the farmers and citizens generally of Georgia. It will establish a mammoth slaughtering-house at some convenient point in the State. Canning factories, refrigerating plants, sugar-houses and other industries will be added as the growth of the business permits. The company will establish concentrating stations in every county of the State. At these stations cattle and produce of all kinds will be bought for cash, thus doing away with the risk of loss in transit.

"The company proposes to encourage the farmers of the State in the improvement of their stock, as higher prices will be paid for cattle of the better class.

"The company will sell its products in England. This market has already been secured through the Lipton, Limited, which is closely related to the British & Southern States, although a separate and distinct corporation. For the marketing of its product the company will put into operation a new direct line of steamers from either Savannah or Brunswick to Liverpool.

"For the carrying out of its purposes the company claims to have already secured options on 125,000 acres of land in Georgia. This land is located in various sections of the State, and will be used as concentrating stations. The company has selected Georgia as its field for operation on account of the many advantages offered by this State."

PRESSURE OF THE BEAUMONT OIL WELLS.

By C. F. Z. Caracristi, C. E., E. M.

[Written for the Manufacturers' Record.]

I went to Beaumont specially to witness the incoming of the new well of the Texas Oil & Pipe Line Co.; not that the bringing in of a gusher on Spindle Top is a novelty, but because the bringing in of this well had a special reference to the value of the field. In other words, the well is surrounded by eighty other gushers, all of which have been permitted to flow, and if the drawing off of the pressure around this would affect general conditions, surely I was in the hope of witnessing such an effect, and from my observations deducing a basis of calculation upon which to estimate the probable "gusher life" of the field. And here I must admit that I was astounded to witness a nozzle pressure which at the very lowest calculation could not be less than 250 pounds to the square inch, or, taking the difference in gravity between water and Beaumont crude oil, a pressure at the bottom of the well of 640. The pressure on the shut-off valve will naturally fall in a few weeks to probably 170 pounds to the square inch, which I assume to be the standard pressure of the wells in the field under normal conditions. It has, therefore, been demonstrated by this examination that the Beaumont petroleum field will continue to spout oil for a much longer period than the most sanguine scientist could have possibly estimated.

The Texas Oil & Pipe Line Co. has unquestionably one of the best wells in the field, if not the very best for its diameter.

I propose in the near future to make a more minute scientific examination of conditions existing at the bottom of the Beaumont wells, which I trust will throw considerable light on the future of the field, as well as upon the phenomenon which surrounds it geologically. The work will be somewhat delayed, owing to the difficulty of having special instruments constructed with which to take temperatures, pressures at low levels, remove sand cores, etc. I believe that taking this work jointly with the ably-organized survey being made under the direction of Dr. Hayes of the United States Geological Survey, we shall be able to present to the world some important information on Southern petroleum and its uses.

The Week at Beaumont.

[Special Cor. Manufacturers' Record.]
Beaumont, Texas, November 2.

There are persistent rumors to the effect that some big syndicate is making arrangements to buy the field. The favorite idea is that an English syndicate is the one that is to do all this. These reports, in so far as they relate to any particular company, are promptly denied as fast as they appear, but there is no doubt that some attempt is being made to get conflicting interests together. The writer is in a position to state this as a fact. It is very doubtful, however, if any conclusions have been reached. There is a possibility that the rumored foreign capital, either English or American, which may come into the field will do so through the channel of one of the large companies that are already organized and doing business under the Texas laws.

On October 27 the "Cordine," said to be the largest oil-carrying vessel in the world, left Philadelphia for Port Arthur to take on a cargo of oil. She will carry about 60,000 barrels. The vessel is owned by the Shell Trading & Transport Co., and is consigned to the Guffey Petroleum Co., which will load her with oil refined from the Port Arthur refinery.

The Texas Oil & Pipe Line Co. brought in a strong well during the week on Spindle Top Hill. To celebrate the event a banquet was had, at which the principal oil men of the city participated.

During October twenty-four wells came in, being the record month since operations began. This makes eighty-five wells on the Hill. While there are prospects that a fair number will come in during November, it is hardly likely that the record established for October will be beaten, and from now on the decrease in the number of new wells will probably be marked. The sources of supply now, figured on the estimated capacity of each well holding out, are greater than the demand can be for several years.

There has been little news of general interest during the past week. Several large enquiries have come to hand, but no large sales have been made public. One noticeable feature of the situation is that many of the better class of oil stocks are slowly but surely advancing. So far two of the companies have paid dividends, namely, the Heywood Oil Co. 4 per cent., and the Keith-Ward Oil Co. 10 per cent. The latter company will very likely pay some handsome dividends in the next three months.

ECONOMY IN PETROLEUM.

An Oil Expert's Opinion of Its Use for Steamer Fuel.

Paul Dvorkovitz, the well-known Russian oil expert and editor of the Petroleum Review of London, was induced by his interest in petroleum to make a visit to this country. He has studied the petroleum fields of the United States, giving especial attention to the recent developments around Beaumont, and is now publishing in the Review the results of his observations. Of special interest is the following from his pen:

"I had an opportunity of specially studying the fuel question on passenger steamers during my trip. As my readers are aware, the Lucania is a vessel of 620 feet in length, 65 feet 3 inches largest width, 43 feet depth from upper deck, and has a gross tonnage of 12,950; two sets of triple-expansion engines are employed, which develop 30,000 indicated horse-power. In the course of the voyage she made the following run: For this journey 3000 tons of coal were used, which were burnt in 100 furnaces; the number of stokers amounts to seventy-five, while there are, in addition, fifty-four trimmers and a number of other assistants, the total personnel of the stokeholds being about 150. As I went through the various compartments they reminded me of a description of the Inferno by Dante. The enormous heat prevailing there made it exceedingly hard work for the stokers and others engaged in working the vessel. The delivery of coal from the central bunkers through very low passages between the boilers naturally makes the work very exhausting, and I was not surprised to hear that the life of these stokers is very short. During the night the speed of the steamer is considerably reduced, not so much for purposes of safety as because the stokers are unable to keep up the steam. By the substitution of liquid fuel for coal the number of stokers required would be reduced to a maximum of about twenty, while the work of even these would be greatly lightened; in fact, there would be practically nothing more to do than to watch the burners to see that they did not become choked up. The temperature of the stokeholds would also be much

more bearable, and there would be no need to load the bunkers with 3000 tons of coal, as 1500 tons of oil would see the trip out. Moreover, the loading of this quantity of coal occupies, as a rule, at least three days, whereupon the necessary amount of oil could be taken on board in a few hours.

"After inspecting carefully all other arrangements in the stokeholds in connection with the boilers, etc., I came to the conclusion that even at the price of 3 to 1 against coal, oil would be cheaper. In addition to this, the vessel would be able to make the voyage in a shorter time. Speed is, of course, a very important factor on the Atlantic, especially as the new German boats are making very rapid crossings. The English steamers, in order to maintain their superiority, must take advantage of every facility to secure this end, and there can be no doubt that the introduction of liquid fuel would be of considerable assistance in this direction.

"What such an introduction of liquid fuel would mean to the oil industry I will just indicate by taking two companies—the Cunard and White Star lines. These two companies jointly make over 200 voyages per year, using for each voyage 3000 tons of coal, or about 600,000 tons for the year. If oil is substituted for this, it means that 300,000 tons would be required for the purposes of these two lines only. My readers may safely assume, also, that if these two companies adopted petroleum, others would have to follow. The argument has been put forward that if all the steamship companies substituted oil for coal, the supply would not be sufficient to satisfy the whole of the demand. This argument may have been true some six months before the Texas oil fields were discovered, but as I shall show later, the aspect of the whole matter has been entirely changed."

The Gulf Petroleum Trade.

Mr. C. F. Z. Caracristi, whose expert work is familiar to the readers of the Manufacturers' Record, has been retained by the Southern Pacific Railroad Co. to make a detailed report on the oil possibilities along the Atlantic division of that company. Mr. Caracristi, in an interview with the New Orleans States, referring to the appointment, said that it would enable him to show the possibilities of Louisiana as he has made known those of Texas. He will go into more minute details and demonstrate the great oil possibilities of the Gulf plateau and the effect of their realization upon industries in the South and Southwest. He said:

"Texas and Louisiana are bound to form the center of the Gulf petroleum business, and the sooner people begin to appreciate the constant value of small wells the sooner will these States enter the arena of actual and not mushroom progress in the oil business. In both Texas and Louisiana there are hundreds of locations that will give oil in paying quantity, but the people are only satisfied with a gusher. The world's attention has been called to the value of the Southwestern oil field, and it has come to stay by the opening up of new productive spots in this vast field."

Steel Plant Additions.

The Ashland (Ky.) Sheet Mill Co. has contracted with a Pittsburg (Pa.) engineer for the construction of a billet plant that is now under way. This will be a continuous billet-heating furnace, with gas producers, and having a capacity every twenty-four hours of 130 tons of 4x8-inch billets. The billets heated in this furnace will be used in the three-high sheet-bar mill which the company is erecting in connection with its four-mill sheet plant.

ORDERS ARE DECLINED.

Healthy Stage in the Birmingham Iron Market.

[Special Cor. Manufacturers' Record.]
Birmingham, Ala., November 4.

Toward the close of last week there was a perceptible hardening in the price of some grades in the iron market, due to their practical exhaustion. The grades are here, stacked up in furnace yards, but they are placed, and only await the cars to be shipped to buyers. There was the same good steady buying that characterized the preceding week, and it made a good, steady, healthy and strong market. It was stated that the source of demand was not confined to any particular interest, and all were "in it." An official in a leading interest said to the writer: "The present condition is something unusual, and it is unexpected to the trade. Every day orders come pouring in in a steady stream for medium and small-sized lots. We haven't the iron to meet this demand, and we are declining more orders than we are accepting." Several telegrams from various buying sections urge hurried shipments. In the list were firms who usually keep well stocked, and are rarely hard run for metal. There is one conclusion—stocks in melters' hands are nominal, and relief is not close at hand. For gray forge there was a good demand all the week, and it about absorbed all that was seeking buyers. The bulk of the sales was at $9.75. On Friday good orders were declined by the leading interest because of inability to meet desired deliveries. On Saturday another interest received an order for 10,000 tons. It has poor prospects for acceptance. No. 3 foundry sold at $10.50 in lots from 1000 tons and less. No. 4 foundry sold all the week at $10. Towards the close the scarcity of gray forge was so manifest that $10 became the asking price. But few sales were made. No. 2 foundry for nearby delivery can safely be quoted at $11.25. The stock is nominal.

To the surprise of the trade, an export order was captured for several hundred tons. But beyond the statement that it was for British account no information concerning it could be obtained. Steel is in good demand at prices withheld, but said to be satisfactory. Production will be increased when the contemplated addition of four open-hearth furnaces is made. Other adjuncts will follow. It is contemplated to improve the furnace plant at Ensley to increase output.

The Trussville furnace is working now to full capacity, and Jenifer furnace has been thrown out by a fire that destroyed stockhouse, elevator, etc.

The railroads never were so taxed to supply cars as they now are, and shippers were never so worried about deliveries.

In coal we still have the same old complaint of scarcity of cars. It will likely continue for some time, as the advent of winter won't relieve the situation.

The Birmingham & Montevallo Coal Co., capitalized at $50,000, has lately been incorporated, besides others of less capital.

From a reliable source we learn of the sale of the dolcite quarries to one of our corporations for the consideration of $40,000.

The East Birmingham Foundry & Machine Co. shipped the past week a train of fourteen cars of machinery to interior Mexico. We are expanding in all lines of industrial pursuits. J. M. K.

Knoxville Iron Works.

Plans and specifications are about completed for the construction of the $500,000 iron works which the Knoxville (Tenn.) Iron Co. decided upon recently. The president is credited with stating that work of erection will commence immediately upon receipt of the plans. The buildings will be of steel.

MAKING PORTLAND CEMENT.

Remarkable Growth of the Industry in the United States.

The remarkable growth of the Portland-cement industry in this country during the past ten years is shown in a report by Spencer B. Newberry for the United States Geological Survey. In 1890 there were sixteen establishments, which produced 335,500 barrels; in 1894 twenty-four establishments, producing 798,757 barrels; in 1899 thirty-six establishments, producing 5,652,266 barrels, and in 1900 fifty establishments, producing 8,482,020 barrels. The increase from 1899 to 1900 was a little more than 50 per cent. The greatest total increase has been in Pennsylvania and New Jersey, though Illinois and Michigan are coming to the front as extensive producers, while in Colorado, Indiana and Texas the industry has been established on a substantial basis, and Kansas and Virginia appear for the first time as producers. The Lehigh valley region maintains its pre-eminence in the production of Portland cement because of the occurrence in that region of inexhaustible supplies of natural cement rock of nearly correct composition for cement manufacture. On this point Mr. Newberry says:

"In spite of the great extension of the industry in New York, Ohio, Michigan and elsewhere, the Lehigh valley region has maintained its proportion of the total product, and still produces nearly three-fourths of the total yield of American factories. This is due to a variety of evident causes, among which are abundance and suitability of the raw material, nearness to extensive markets in Eastern cities, low freight rates over through lines by rail and water to Central and Western points, and low cost of production resulting from manufacture on a very large scale. Another advantage possessed by producers in this section is the accumulated experience of engineers, who, for more than twenty years, have been designing and operating cement machinery adapted to this special raw material. In consequence of this the output of the works is large and steady, stoppages are infrequent and cost of repairs is reduced to a minimum. There can be no doubt that the manufacture of Portland cement in the Lehigh valley has reached a perfection, precision and economy never before attained in this country or in Europe. The low cost at which cement is made in that region, and also elsewhere in the United States, and the remarkable excellence of the product are a surprise to foreign experts, and the latter are hastening to adopt the methods designed and perfected in this country.

"The question of supply of material has also been the chief factor in determining the growth of the industry in other sections. Cement rock, pure limestone and clay and marl and clay are the materials available for Portland-cement manufacture. It is probably true that the cost of manufacture from cement rock, if of nearly the composition of a correct mixture and favorably located for quarrying, is slightly less than from other materials. No extensive deposits of such rock have, however, been found elsewhere than in the Lehigh valley region. Marl and clay, if in deposits of sufficient extent and favorably situated for excavation, have been proved to be most advantageous materials, the cost of mixing and drying being little, if any, in excess of the cost of quarrying and grinding the cement rock. The question between these two classes of material is an engineering one, and depends upon scale of manufacture and methods of handling. Certain factories using marl in the central part of the country have already developed the excavation and manipulation of this material in an astonishing manner, and bid fair to reduce the cost of manufacture to a point below that of the best-operated factories in the Lehigh valley. The question of scale of production will, of course, in the long run, be the deciding factor, and the only marl-cement factories able to hold their own will be those commanding a supply of material of sufficient extent to allow prompt increase to an output of several thousand barrels per day. Production at a cost not exceeding fifty cents per barrel will be imperative in the near future. This figure is already being closely approached, both in the Lehigh valley and in the central section, and the day of small factories is rapidly drawing to a close."

Mr. Newberry has made a careful estimate of the outlook for the manufacture of Portland cement in this country for the next two years as follows:

Works operating in 1900	50
Works started in 1901	5
Works building in 1901	16
Works projected	15
Total	86

The probable capacity of these factories is as follows:

	Barrels.
Product in 1900	5,482,020
Capacity of works operating in 1901	13,260,000
Capacity of works operating and building, 1902	16,410,000
Capacity of works operating, building and projected, 1902	21,460,000

"It is safe to say," adds Mr. Newberry, "that the increased consumption of Portland cement this year and next will be far from sufficient to absorb this immense output. There are many indications that the factories now in operation will produce in 1901 considerably less than their full capacity, and it is not likely that the total product for the present year will exceed 11,000,000 barrels."

During the ten years under review, in spite of an enormous production of Portland cement abroad, reaching 44,000,000 barrels in 1900, of which Germany produces 15,000,000, the imports of the product into the United States has been practically stationary, having amounted to 2,988,313 barrels in 1891 and 2,386,683 barrels in 1900. This condition Mr. Newberry does not believe will continue, and he looks for a decline in the imports. He says:

"High-grade Portland cement is at present manufactured in this country much more cheaply than anywhere in Europe, and is sold nearly a dollar per barrel cheaper than imported brands of no better quality. Further, the leading American manufacturers are in a position to warrant their products to give tests superior to the best imported, and for their own reputation are always ready to guarantee delivery in good condition and to be responsible for the success and durability of important work in which their cements are used. These safeguards to the consumer are wholly lacking in the case of imported cements, while abundant ground for complaint against many foreign brands is found in damage by water, breakage of packages, etc."

Indeed, American manufacturers are beginning to export, the quantity sent out of the country having increased from 85,486 barrels in 1896 to 139,939 barrels in 1900. There is a good demand for this cement in Canada at prices high enough to allow export to that country in spite of the duty of fifty cents a barrel, although four factories in Ontario in process of construction will go far toward supplying the demand in that province.

There were 8,383,519 barrels of natural rock cement produced in the United States in 1900, which is about the average for the last five years. Mr. Uriah Cummings, who makes a report on this product, cred-

its 335,070 barrels to Maryland, 17,000 barrels to Texas, 25,313 barrels to Virginia, 10,000 barrels to Tennessee and 28,000 barrels to Georgia, in which State the remarkable deposit at Rossville has been developed by the construction of a first-class plant.

Slag cement, a mechanical mixture of granulated blast-furnace slag and slaked lime, was made in 1900 at five factories in New Jersey, Maryland, Ohio, Illinois and Alabama, respectively, the total product being 365,611 barrels. Mr. Edwin C. Eckel made a study of the two slag-cement plants in operation in the Birmingham district which use the former waste product of basic slags from the blast furnaces near Birmingham, and he says that the utilization of this waste product for cement will probably prove profitable, as the simplicity and cheapness of the processes employed in the manufacture of this class of cement, together with the low cost of the raw materials, enable them to be produced at a very low figure, probably considerably less than that for the so-called natural cements.

DRAINING A GREAT CITY.

Elaborate System Under Construction at New Orleans and Its Value to the Community.

The system of drainage under construction at New Orleans has aroused much interest among engineers on account of the unusual difficulties presented in the work and the extent of the area served. The topography of the city prevented the engineers from using the force of gravity in carrying off any portion of the drainage, and practically all of it is removed from the city limits by pumping. The fact that the surface of the Mississippi river, which would form an excellent outlet, is higher than the level of streets forced the promoters of the system to solve this problem in another way, but it can be said that they have done it satisfactorily. According to statements of experts, no other drainage system has yet been attempted under the same circumstances in America, unless that of the City of Mexico can be cited as a parallel, but in that instance the refuse water is carried away through a tunnel in the wall of the plateau on which Mexico is situated, and the force of gravity performs the rest of the work. About 25,000 acres of territory are to be drained by the New Orleans system, which consists of series of canals varying in length from 560 feet to 13,000 feet, and in width from five to forty feet, with laterals reaching the various residence and other buildings.

The first work undertaken was an open canal 6000 feet in length, forty feet in width and twelve feet in depth, in June, 1897. Since that time lined and covered canals aggregating eight miles in length and open canals aggregating sixteen miles in length have been completed, in addition to several of the pumping stations. An idea of the magnitude of the work can be gained when it is stated that the covered canals are built upon foundations of plank, the larger ones supported by piling, with bottoms of concrete and side walls of brick. The latter are constructed strongly enough to support the steel beams and brick arches, which, in turn, support the pavements of the streets, under which many of the canals have been located.

A power-house has been erected which will supply electric-power for the various pumping stations. It is 181 feet in length, 140 feet in width, and has been equipped with a set of engines and dynamos representing 3600 horse-power. It is calculated, however, to equip it with 6600 horse-power additional, making a total of over 10,000. Five of the pumping stations of the series which will remove the water from the canals have also been completed. Each pump has a capacity ranging from 180 to 250 cubic feet per second, but provision is made for additional machinery, which will increase the capacity to nearly 6000 cubic feet per second, or 45,000 gallons. With all the pumps installed in the stations twenty-six will be in operation, allowing several to be held in reserve in case of accident. The cost of the pumping stations ranges from $135,000 to $350,000 each.

Contracts for the work, which is being carried out by the sewerage and water board of New Orleans, are let as fast as the necessary funds are made available for it. Up to April 1, 1900, but $2,156,450 were expended, although the total estimate of the work was placed at $7,934,000. The financial plan, however, makes ample provision to complete the system, as it allows the expenditure, if necessary, of $12,000,000. The floating of these securities marks an epoch in financiering in the South, owing to the remarkably low rate of interest at which they were disposed of and the extent of the issue. It was approved at an election held in April, 1900, and in December of the same year a syndicate composed of New Orleans and New York banks purchased $12,000,000 at an interest basis of 3.77. Of this amount, nearly two-thirds were taken by local investors, showing the confidence of home capitalists in the enterprise. Since that time work has been prosecuted steadily, although a considerable area remains to be covered by the series of canals.

One of the benefits already apparent is the reclamation of a large tract of property in the suburbs, which is being used by market gardeners, while the menace to the public health which existed hitherto in these localities has been removed. At present contracts are under way involving the expenditure of about $1,000,000, which includes a total of ten miles of the lined canals. When these are completed what is known as the Broad street canal, which will be the largest in the city, will be constructed, as well as several additional pumping stations and a number of laterals.

The results of the work thus far completed show that the system will free the city entirely of drainage of every kind, and its benefit from a sanitary standpoint is almost beyond calculation. From a business point of view the improvement is most desirable, as it will greatly enhance the value of real estate of all kinds and undoubtedly increase the attractiveness of the community as a place of residence and for general business. It is unnecessary to say that New Orleans has been forging ahead at a remarkable pace in commerce and industries generally, and the drainage system will be a great incentive to additional progress on these lines. The Manufacturers' Record is indebted to Mr. Thomas L. Raymond, first assistant engineer of the sewerage commission, for statistics relative to the undertaking.

Improving Gulf Ports.

The arrival of the Algiers floating dry-dock at New Orleans directs attention to the work being done by the government on the Gulf coast. Mr. R. P. Clark, one of the government contractors of Galveston, believes that more work of this kind is being done than ever before. In an interview at Galveston he pointed to the following undertakings in which his firm is interested:

Dredging out to twenty-five feet Southern Pacific docks and approaches at Galveston.

Dredging the channel from Galveston to Buffalo bayou for twenty-three miles.

Contract closed for work on the jetties at Aransas Pass.

Improvement of Pascagoula river to Scranton, Miss., and Horn Island harbor, which is also being dredged.

The dredging of Sabine Pass.

GROWTH OF INDUSTRIES.

The Ever-Widening Circles of Production Well Illustrated.

Citizens of Fort Worth, having raised the bonus required for the establishment of a packing-house plant jointly by the Swifts and Armours, the Fort Worth Register points to the growth of St. Joseph, Mo., St. Louis and Kansas City as illustrations of what Fort Worth may become as a result of the new move. It says:

"The packing-houses will buy all the fat cattle they can get. This will cause a centralization of the beef cattle in Texas. This in time will induce others to come from other cities, so that the packers will not get all the beef at their own prices. The country people will ship in all kinds of cattle, and the commission men will build up a stock cattle trade that will bring people here from all parts of the South, West and Northwest. One-third of Kansas City business is in stock cattle, but it is one of the outgrowths that are caused by the centralization of beef cattle.

"The whole country is awaiting the moment for a city in Texas to become a great center where people from other States can come and depend upon buying calves, yearlings and two-year-olds to stock up their farms and pastures.

"Again, the packing-house will buy canning cattle, and that is an all-important branch of the business. Canners are worth as much to a packer in Fort Worth as they are in Chicago. Why, then, pay large freight bills simply to transport cattle where they are of no greater value than they are at home? The benefits from the canning industry alone are more than worth all the bonus for the packeries. One-third of all the cattle marketed from Texas are canners, and we wish to insure a couple of dollars a head more for these canners at a home market than they would receive elsewhere.

"Again, the packers purchase fat hogs, which Texas is able to supply. The hog is the mainstay of the general farmer. Hogs can be and are raised in Texas cheaper and better than in any other State. At an age of less than nine months hogs are put in market that best suit the packers. The hog-raising industry will center on Fort Worth, and will make the farmers prosperous. They are the very people upon whom the retail trade of a city depends, and the hog necessarily seeks its nearest great market.

"The packing-hog trade causes a centralization of hogs, which in turn induces a butcher-hog trade from other cities. It also builds up a trade in stock pigs, which is a considerable item in the success of an up-to-date market.

"Packers also buy large numbers of fat sheep, and consequently induce large shipments wherever they are located. If cattle need a home market, sheep need it ten times more. Long-distance shipments of sheep ruined the business. A home market can revive it and enlarge it beyond all expectation. Packers who buy fat sheep want fat lambs also. Fat lambs do not stand transportation well. They need to be killed at home, and the packers know how to distribute them to the best advantage at the least possible expense. Packing-houses at Fort Worth will be the direct cause of an increase of sheep-raising with the farmers, and for every car of fat sheep sold in the market a car of stock sheep will be sold for shipment and another car will be sold to a local country feeder.

"The last few years has developed a centralization of horses and mules at great markets. The Chicago, St. Louis and Kansas City markets have the horse and mule trade that was scattered formerly in many places. The horse and mule trade of Texas and the South is now begging for a location. Fort Worth is the natural center of this business, and with the other branches of trade secure, this branch cannot keep away. Some progress is already made in this direction. This branch of trade makes no great show in numbers compared with others, but it employs many men, and it has a distinct prosperity of its own. Collectively, the live-stock trade of Texas is offered to Fort Worth. Take it, and it will double the size of the city; it will bring revenues and profits to our country customers; it will double the number of employes who work for wages; it will multiply the bank clearances; it will enhance the value of every foot of ground in a 30-mile circle; it will bring all kinds of enterprises to the city, and will enlarge it influence as a railroad center by making it impossible to enter or leave the State without visiting the greatest city in it.

"This is 'the tide which, taken at the flood, leads on to fortune.'

"We have told but half the story."

Developing Carolina Minerals.

Announcements made at Danville, Va., during the week refer to new developments in the Virgilina copper belt in Person county, North Carolina. One hundred and fifty acres of land in the belt have been secured by parties who have incorporated the Danville & Virgilina Copper Mining Co., with capital stock of $500,000, to thoroughly develop the property. Deposits of copper glance, gold and silver ore have been located by preliminary operations on the new company's property. James G. Penn is president; Jas. A. Henderson, vice-president; F. H. Henderson, treasurer, and Geo. L. Noell, secretary, all of Danville, Va. Messrs. Carl H. Arlan of Utah and B. L. Duke of Durham, N. C., are among the directors.

A Capital House Party.

A party of forty-six capitalists of Pittsburg and New York are the guests this week at Gold Hill, N. C., of Capt. E. B. C. Hambley of the Whitney Reduction Works at that place. The party will be entertained by Captain Hambley until the 10th inst., a special house having been erected for its reception. Many of its members are interested in the work of the Whitney Reduction Co. in the rapidly-developing Gold Hill section, and others have to a certain extent the character of prospectors, and their visit is expected to have material results. The party traveled from Pittsburg in a vestibule train and five coaches in charge of Mr. Thomas Watt of the Pennsylvania Railroad.

Texas Fisheries.

Further development of the red-snapper fishing industry on the Texas Gulf coast is planned by New York and Western parties, who have just purchased the Galveston Red Snapper Co., with its franchises and plants. This company's capitalization is $700,000, and it has been incorporated as the Gulf Fisheries Co. The plans include the commissioning of additional fishing vessels, the enlargement of the ice factories and fish-freezing plants and other action tending to increase largely the product of marketable goods. Beaumont oil is being used in the ice factory's power plant, and the new vessels are to adopt it. Henry Wol-

cott of Denver, Col., is heading the new company.

Commerce of New Orleans.

An idea of the expanding commerce of New Orleans can be gained by a study of the schedule of steamship sailings for the month of November. No less than sixteen vessels will clear for Liverpool, while four will sail for London, two for Belfast, six for Antwerp, five for Barcelona, six for Bremen, seven for Copenhagen and other Danish ports, nine for Genoa, five for Hamburg, four for Havre, three for Marseilles and six for Rotterdam. Other ports to which cargoes will be sent are Trieste, Norwegian and Swedish, as well as several Asiatic ports.

Literary Notes.

With all the catchpenny critics of Europe taking their little fling at the United States, it is interesting to note that Tolstoi is still our friend. In the current number of Leslie's Monthly there is the interesting record of this conversation upon America and Americans with a correspondent of the magazine. His criticism, though discriminating, is eminently kind. This same October issue of Leslie's Monthly has a number of unusual features. One of these is the first short story which Charles Frederick Goss has yet been induced to write. "The Redemption of David Corson" aroused more debate, perhaps, than any other book of last year, and this shorter tale, "The Story of a Thief," is bound to come in for vigorous discussion. Other features in the number worth talking about are an interesting description of Maximite, the most powerful of practical explosives, by its inventor, Hiram Maxim, and a rattling account of "The Texas Rangers," an organization which the author rightly styles the most efficient police force in the world, and "The Autobiography of a High Climber," a most diverting history.

Doubleday, Page & Co. announce that their magazine, Country Life in America, has found a welcome of unexpected proportions and enthusiasm. Not only does the idea of Country Life in America appeal to all who love the country, but the name of the editor, L. H. Bailey of Cornell, gives solid assurance that the magazine will be popular, interesting, beautiful and of high standard. Certainly no more superbly illustrated magazine has ever been printed. Among the contents is an article by the editor on abandoned farms, what they are and what may be done with them, with charming illustrations; an illustrated account of ex-Governor Levi P. Morton's place, Ellerslie; a two-page collection of suggestive pictures of pleasant country homes; the history of the frog from tadpole to froghood, with remarkable photographs by A. R. Dugmore, made from life; articles on planting the lawn, the art of letting things grow, the newest fruits, and a vast amount of practical matter about the garden, the greenhouse, and even the window box, all of which is abundantly illustrated.

The publishers of Frank Leslie's Popular Monthly are celebrating the twenty-fifth birthday of their magazine by issuing an extraordinarily large and handsome number. The magazine, which consists of 168 pages, is profusely illustrated, no single page being left without a decoration of some kind, while scattered through the issue are several handsome full pages in colors. The text has a number of really notable features—an authoritative article by Nansen on the half-dozen expeditions now racing for the Poles, the opening chapters of a new novel by Maurice Hewlett, the first considerable work he has done since the publication of "Richard Yea and Nay;" a new animal story by Charles G. D. Roberts, author of "In the Heart of the Ancient Wood;" "How Tammany Wins," written, curiously enough, by an outspoken spoilsman; "The Great Automobile Race from Paris to Berlin," and "The American Diary of a Japanese Girl," a wonderfully naive and spontaneous narrative which makes a brand-new departure in magazine literature.

The Thanksgiving number of The Ladies' Home Journal is replete with good fiction and interesting and novel features. It opens appropriately with an article which tells "Where the President's Turkey Comes From." Then there are delightful stories by Hezekiah Butterworth and Laura Spencer Portor, and a new love story called "Christine," by Frederick M. Smith. Cleveland Moffett has an interesting story about Ira D. Sankey, the great evangelist, and Edith King Swain recounts the famous ascents she has made in various parts of the world. Will Bradley's original designs for a house begin with the breakfast-room, and Wilson Eyre, Jr., presents plans for a country house and a garden. Mr. Bok gives much good advice to young married couples in his editorial. Another most timely feature is "Why Should a Young Man Support the Church?" by the Rev. Francis E. Clark.

Cassier's Magazine of illustrated engineering has in its November number the following articles: "The Iron and Steel Industries of Sweden," by Robert W. Hunt; "Training Apprentices—In the Royal Dockyards of Great Britain," by Frank Barter; "British Cargo Boat Machinery—Twenty Years' Progress," by J. E. Walliker; "The Future Power Problem—Sources of Energy After Coal," by T. C. Mendenhall; "The Economical Speed of Ships," by E. H. Tennyson-D'Eyncourt; "Modern Machine Tools," by Ewart C. Amos; "Electric Power Supply in Great Britain," by C. S. Vesey Brown.

Arthur Foley Winnington-Ingram, Lord Bishop of London, contributes an interesting paper to the November Cosmopolitan on "The Overcrowding of Great Cities and Remedies for It." Apropos of the discussion of the invasion of England by Americans, Edmund Gosse furnishes in the same number an essay scoring Englishmen for their narrowness of intellect. Incidentally he has a hit at American intellectual life in the twentieth century.

The Southern Hardware Jobbers' Association, of which Mr. C. B. Carter of Knoxville, Tenn., is secretary-treasurer, has offered prizes of $50, $25 and $10 for the best three essays of not more than 1000 words on trade mismanagement and its attending consequences as viewed from a traveling man's standpoint. Any traveling salesman of any Southern hardware jobbing house is eligible to the competition.

The new steamship line between New York and Savannah includes the vessels Northmen and Northland, and is to go in service at once. The ships are of 3500 tons each, and were built upon the Great Lakes. It is expected that the principal northbound cargoes will be lumber, while they will load miscellaneous freight at New York.

Mr. Fred K. Miller, secretary of the New Orleans Maritime and Merchants' Exchange, will begin on November 9 the publication of the Gulf Ports Marine Journal as the organ of his exchange.

The Seaboard Air Line Railway Co. has ordered 300 additional freight cars to handle the increased business which is offered the system.

RAILROADS.

[A complete record of all new railroad building in the South will be found in the Construction Department.]

IMMENSE EXPENDITURES.

Improvements to Be Made This Year by the Pennsylvania Railroad Co.

The Pennsylvania Railroad has for many years been a standard in the country. This distinction is the result of steady improvements in its physical condition, the purchase of rolling stock and other measures deemed necessary by the management to keep the system in the best possible condition. In a general way it is known that the work necessitates a very large outlay annually, but it is doubtful whether the public realize the amount which the company pays out. Some of the appropriations for various purposes for the coming year will give an idea of this expenditure. More than $1,000,000 alone, it is announced, will be expended in eliminating what is known as the "Horseshoe" curve between Altoona and Pittsburg, Pa. Although this work will shorten the distance but three miles, the company considers it very desirable, and plans have been prepared for the purpose. To relay parts of its main line and branches at various points the company has given orders for 170,000 tons of heavy rail, or enough to cover nearly 1500 miles of the line. The cost of this material alone is estimated to be $4,750,000. To provide sufficient rolling stock to transport its freight traffic it has decided to purchase 15,000 freight cars, which will include 2000 built entirely of steel. The variety of the cars indicates the great diversity of raw material and manufactured products which the company hauls. They will be used for coal, ore, lumber, metal work, furniture and miscellaneous freight. This year's estimate is more than double the order for cars last year, which aggregated 6500 cars, and will represent an outlay of fully $8,500,000. Other improvements to the system contemplated are the construction of seventeen miles of additional track in Western Pennsylvania and the expansion of the Philadelphia, Wilmington & Baltimore division into a four-track line, as already referred to in the Manufacturers' Record. The estimate of the appropriations for these betterments will aggregate fully $16,000,000, and the figures indicate the broadness of the policy of this company. It is one of the reasons for its really remarkable prosperity which has enabled it to not only declare a semi-annual dividend of 2½ per cent. upon its common stock, but an extra dividend of 1 per cent., making its securities one of the best-paying railroad investments in the world.

A Statistical Cyclopedia.

In connection with the publication of Poor's Manual for 1901, it is interesting to note the history of this standard work among railroad men and financiers generally. The first issue, dated 1868, contained but 442 pages, although statements were included covering the operations of the various railroad companies at that time. The Manual has increased in size to nearly 2000 pages, containing statements of 1844 steam railroads in the United States, 163 in Canada and nineteen in Mexico, in addition to all of the important street-railroad systems in this country and Canada. The department relative to miscellaneous corporations contains valuable statistics of the principal industrial and other companies, and investors especially will appreciate the department relative to the financial condition of the States and cities, which comprises 132 pages alone. One of the remarkable features of the Manual is the amount of comparatively late information given in it. The system of obtaining data is so complete that reports appear which have been made public but a comparatively few weeks before the work comes from the press. Yet in spite of the really vast amount of labor required, errors, clerical and otherwise, are practically unknown, and the railroad official, banker or investor has come to rely upon the information as implicitly as if every statement was verified over the signature of the corporation directly interested. As the publishers claim, the official character of Poor's Manual is unchallenged, and this is one of the reasons why it is to be found on the shelves of every library and commercial exchange in the United States and in many cities abroad.

140 MILES OF TROLLEYS.

A $7,000,000 Syndicate to Build a System in Kentucky.

A syndicate of Northern and Kentucky capitalists has been formed to construct an extensive system of electric railroads, of which the city of Lexington will be the center. It represents $7,000,000 capital stock, and includes Senator George D. Davis, Edward D. Davis and Blaine Cavitt of Detroit, Mich.; S. D. Knapp, Jr., of New York; Elliott G. Stevenson, also of Detroit, while the local directors include Hon. M. C. Alford, W. J. Loughbridge and H. P. Headley, all of Lexington.

In a telegram to the Manufacturers' Record Mr. Alford states that it is proposed to construct about 140 miles of electric line, connecting Lexington and a number of other communities in the "bluegrass" section of the State, and that the company has been financed. The principal offices will be at Lexington, where a large power plant will also be constructed. It is probable, however, that stations will be erected at various other points on the system. It is understood that among the towns which will be reached are Georgetown, Winchester, Versailles, Frankfort and Paris.

Within the last three months the Manufacturers' Record has referred several times to the promotion of electric railroads in this section of the State, and it is believed that the company represents a combination of interests which have been back of the plans referred to.

West Virginia Electric Roads.

[Special Cor. Manufacturers' Record.]
Wheeling, W. Va., November 5.

Thomas G. McKell has begun the construction of several miles of trolley road at Thurmond to circle in the suburbs, crossing New river on a bridge to be constructed later, and return to the well-known mining town. The improvements will add greatly to the advancement of the Fayette county coal fields, for it will establish rapid communication between a number of mining centers and rapidly-expanding towns.

The Clarksburg & Fairmont Electric Railroad, which has practically completed its lines in the towns of Fairmont and Clarksburg, has started surveyors to lay out a route for a connecting road, which will be about eighteen miles long. Both sides of the West Fork river are being surveyed, and it is the expectation of the company to begin the new line early in the spring. Besides establishing communication between the two chief points before named, the road will tap one of the most populous districts in the interior of the State. About $100,000 is to be spent on the connection alone, besides the improvements to power plant, etc., previ-

ously referred to in the Manufacturers' Record.

What is said to be the largest colliery in the world is being opened at Monroe Junction, in Mingo county. For mine No. 1 a heading 1400 feet long is being driven; for No. 2 one 7000 is to be run. The enterprise is one of the most stupendous in the history of West Virginia mining.

Possible East and West Line.

In a recent issue of the Manufacturers' Record reference was made to the possible culmination of a plan to complete a new system across West Virginia and Virginia from the Ohio river to a point on tidewater, by the extension of the West Virginia Central & Pittsburg system and the purchase of what is known as the Little Kanawha Railroad by this company. According to a dispatch from Parkersburg, W. Va., the control of the Little Kanawha has passed into the hands of the West Virginia Central & Pittsburg Company, and a line is to be built to its terminus from Belington or Elkins to the West Virginia Central. It is also stated that arrangements are to be made to connect the West Virginia Central with the Chesapeake & Western line, which recently floated a bond issue to complete extensions east and west. It is reported that the Chesapeake & Western will either be built to Orange, Va., to reach the Potomac, Fredericksburg & Piedmont Railroad, or will be constructed over a different right of way to a point on the York or Potomac river.

The West Virginia Central & Pittsburg Railroad is reported to be acting in the interest of the Gould syndicate, which will use it as a tidewater route for the Wabash system by building a line from Parkersburg across the Ohio river and through Ohio to this road.

A Tennessee Electric Project.

In a recent issue the Manufacturers' Record referred to a plan to build an electric railroad which would connect Knoxville, Tenn., with several towns in Sevier county. W. T. Goffe of Toronto, Ont., one of the principal promoters of the enterprise, in a letter to the Manufacturers' Record writes that the total length of the line will be fifty-four miles, including the main line, forty miles in length, and branches. He intimates that right of way has been secured for the entire distance, while the company has applied for a charter under the title of the Knoxville, Kimberlin Heights & Sevierville Electric Railway Co. It is proposed to secure the current for electric motors from water-power on the Pigeon river near Sevierville by the construction of a series of dams. The line will be used for freight and passenger traffic if built, and, according to Mr. Goffe, the necessary capital will be secured from the Northern States and Canada.

Atlantic & Birmingham.

Further particulars of the extension of the Waycross Air Line Railroad have been received by the Manufacturers' Record in a letter from Mr. George D. Wadley, vice-president. Mr. Wadley states that it is proposed to extend the main line to Birmingham, also to build a branch to Atlanta. It is calculated that the extension to Birmingham will require about three years to build. No decision has been reached as yet relative to a Southern extension which has been reported. The total distance to Birmingham is estimated at 397 miles, and to Atlanta seventy-five miles. The directors have authorized an amendment to the company's charter to include these extensions. The Atlantic & Birmingham, which is the new title of the Waycross Air Line, is now being completed from Fitzgerald to Cordele, a distance of thirty-seven miles.

Memphis to Mobile.

A dispatch from Jackson, Miss., states that the Mobile, Jackson & Kansas City Railroad Co. has absorbed what is known as the Kingston & Central Mississippi line, in operation in Jasper county a distance of fifteen miles. The Mobile, Jackson & Kansas City is now being completed to Jackson, and it is stated will be further extended to a connection with its new acquisition. The Kingston & Central Mississippi was projected to extend north to a junction with some line reaching Memphis, Tenn., and it is reported that the new owners of the road intend carrying out this plan, thus forming a new route between Memphis and Mobile. The Mobile, Jackson & Kansas City is controlled by a New York syndicate, of which F. B. Merrill is president and general manager.

Electric Line in Western Maryland.

The company constructing the electric line in Western Maryland between Cumberland, Frostburg and Lonaconing, it is announced, has decided to extend it to Westernport, and has organized the Westernport & Lonaconing Railroad Co. to carry out this part of the project. The Penn State Construction Co. of Philadelphia is completing the road between Cumberland, Frostburg and Lonaconing, and it is understood will secure the contract for the balance of the distance. J. W. Burchinal of Moundsville, W. Va., is one of the principal promoters of the system, which will be thirty miles in length.

An 80-Mile Line.

Interest in the plan to build a railroad between Florence, Ala., and Clifton, on the Tennessee river, has been revived by the filing of a mortgage made by the Alabama, Tennessee & Northwestern Railroad Co. to the Knickerbocker Trust Co. of New York to secure a bond issue to the extent of $1,600,000. A dispatch from Florence is to the effect that the bonds have been issued and the construction of the work assured. The estimated length of the line is eighty miles, and the route was surveyed several years ago. The promoters include J. L. Bell of New York, who is president of the company.

Mr. Hood Re-elected.

At the annual meeting of the directors of the Western Maryland Railroad Co. Mr. John M. Hood was re-elected president and general manager, and Mr. J. M. Barnes, secretary and treasurer. The report of the company's operations for the past year has already been referred to in the Manufacturers' Record, as well as the extensive improvements which are now being made. They include fifteen miles of second track between Cherry Run and Shippensburg stations, as well as the rebuilding of several bridges and the reduction of grades at several points.

Large Orders for Rails.

It is announced that the Baltimore & Ohio Railroad Co. will contract for 50,000 tons of steel rails to meet its requirements during the coming year. The rails will be utilized on various portions of the system. It is understood that the quantity will be divided among several companies.

The report of the Northern Central Railway Co. for the nine months ending September 30 is extremely flattering to its management. The increase in gross earnings amount to $363,000, and in net earnings to $180,000.

TEXTILES.

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the Manufacturers' Record. We shall be glad to have such matter at all times, and also to have any general discussion relating to cotton matters.

Southern Cotton Spinners.

The fifth annual convention of the Southern Cotton Spinners' Association will be held at Atlanta, November 14 and 15. In the morning of the opening day an address of welcome will be made by the mayor of Atlanta, to which Mr. D. A. Tompkins will respond; Dr. John H. McAden will make the president's annual address, and Mr. Richard H. Edmonds, editor of the Manufacturers' Record of Baltimore, Md., will speak on "A Southern Industrial Task." In the afternoon an excursion around Atlanta will be tendered the association and its friends by the Southern Railway Co., and at 6.30 P. M., in the dining-room of the Kimball House, the members of the Atlanta Chamber of Commerce will entertain the association at a Bohemian "smoker," at which addresses will be made by United States Senator John L. McLaurin of South Carolina on "The Extension of Our Foreign Trade," and by Mr. Hoke Smith of Atlanta. The business matters of the association will occupy it during the morning of the second day, and in the afternoon they will visit the A. French Textile School of the Georgia School of Technology at the invitation of President Lyman Hall.

Suggestion for Cotton Growers.

Editor Manufacturers' Record:

As was published in the Manufacturers' Record, we proposed building a mill for spinning fine cotton yarn, No. 60 and above, and finish the same, dyed and mercerized. The notice you gave us brought a volume of inquiries in regard to purchases. We began investigating by correspondence with expert textile manufacturers, and to our disappointment learned that the numbers of yarn we desired to make cannot be manufactured from the best grade of cotton grown in this section, it being necessary to use Egyptian or Sea Island cotton.

Since the supply of this cotton is limited and not obtainable nearby, we have concluded to abandon our purpose to build, rather than take chance on equipping a first-class mill and not be able to get cotton from our home markets. Thanks are extended to all persons who have given us information. L. A. McCord.

Laurens, S. C.

The Cotton Movement.

During the first two months of the present cotton season, according to the report of Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, the amount of cotton brought into sight was 2,841,613 bales, a decrease under the same period last year of 508,091 bales; exports were 1,389,037 bales, a decrease of 38,070 bales; takings by Northern spinners 331,251 bales, an increase of 24,714; by Southern spinners 334,143 bales, an increase of 59,537 bales.

$250,000 Woolen Mill Company.

It is announced at Baltimore, Md., that the woolen mill of the Maryland Woolen Co., in course of construction for several months past, has been completed. This plant is modern in its character throughout, and is to produce 2,000,000 yards of woolen cloth annually, employing 300 men as operatives. Several buildings already at the site have been utilized, and a new structure two stories high, costing $6000, has been built. The equipment of machinery is said to be valued at $100,000. The company has incorporated under New Jersey laws, placing its capital stock at $250,000. Nicholas W. Steele, an experienced silk manufacturer, is manager of the enterprise.

Textile Notes.

Joseph Hamburg is interested in the proposed organization of the cotton-mill company at Vicksburg, Miss., recently mentioned.

The Cedartown Cotton & Export Co. of Cedartown, Ga., has been incorporated, with capital stock of from $100,000 to $800,000, by Cedartown and Philadelphia (Pa.) parties.

Rumors say that a cotton-mill company is organizing to build another mill at Quitman, Ga.; also to build a 10,000-spindle plant at Conyers, Ga., to be capitalized at $250,000.

Massachusetts Mills in Georgia, Lindale, Ga., is installing fifty additional looms that were ordered recently. This installation makes the company's total of looms 1800; the spindles number 50,000.

Ashland Manufacturing Co. of Dickeyville, Md., has let contract to Wm. Ferguson & Bro. of Baltimore for the erection of its proposed new power-house, mentioned last week. The structure will cost $20,000.

It is stated that David N. Sease, representing a $125,000 silk-mill company of Pennsylvania, is investigating relative to the establishment of a silk mill at Huntington, W. Va. A plant to employ 300 hands is talked of.

Arkwright Mills of Spartanburg, S. C., has put in operation its 10,000 spindles and 288 looms, comprising the additional machinery installed recently. The company's full complement of spindles is now 22,000, with 750 looms.

It is rumored that the Denison (Texas) Cotton Mills will resume operations soon, with Eastern capital in control. The American Cotton Spinning Co. had been operating the plant until recently. There are 15,300 ring spindles in position.

F. L. Martin, 794 Union street, Memphis, Tenn., contemplates establishing a mill for the production of light fluffy bats used in comforts, quilts, etc. He is desirous of corresponding with makers of or dealers in the necessary machinery.

Eastman (Ga.) Cotton Mill Co. will increase its capital stock from $100,000 to $120,000. The plant is now in course of construction, and is to have 5000 spindles and 160 looms. Buildings are ready, and the machinery is being put in position.

A special meeting of the Texas Cotton Manufacturers' Association was held at Dallas last week. Papers upon subjects of interest to those present were read. The promotion of the best interests of the Texas cotton mills is the association's purpose.

Work is progressing on the development of the water-power near Grayson, Va., which is to supply power for a 50,000-spindle and 1200-loom cotton mill. The power and mill development is that of the Washington Cotton Mills Co., announced some months ago.

The reorganization of the Matoaca Manufacturing Co. of Petersburg, Va., referred to last week, has been effected since, with Chas. H. Hall as president. This action is taken to facilitate developments proposed by the South Side Rail-

way & Development Co., which recently bought control in this mill company, that has 10,512 spindles and 330 looms in plant.

Richard Cromwell of Baltimore has resigned the presidency of the United States Cotton Duck Corporation, and will hereafter attend to the Mount Vernon Mills division of the company. Trenor L. Park of New York city has been elected to succeed Mr. Cromwell.

Announcement is now being made in legal form of the sale of the Fairmont (S. C.) Mills. The date set is December 2, and the upset price is $75,000. The plant includes 6144 spindles, 176 looms and complementary machinery, etc. J. J. Burnett, master, will hold the sale at Spartanburg, S. C.

Standard Cotton Mills of Cedartown, Ga., has completed the addition that has been in course of construction to its main building. The additional machinery decided upon some months ago is now being installed. The new spindles will number 6000, which increases the total equipment to 12,500 mule spindles. This improvement about doubles the capital of $50,000 invested.

The Millertown Homes Co. of Charlotte, N. C., has been organized, with John W. Miller as president; R. M. Miller, Sr., vice-president, and R. M. Miller, Jr., secretary-treasurer; capital stock is $100,000. This company has purchased 300 acres of land in the suburbs of Charlotte, which will be developed as a manufacturing town and is an extension of the plans that have established the Elizabeth Mills, the $100,000 cotton mill about completed.

Cottonseed-Oil Notes.

A fire at Darlington, S. C., last week destroyed the gin, factory and office of the Darlington Oil Mill Co.; loss estimated at $25,000, with a partial insurance.

The cottonseed-oil mill at Laurinburg, N. C., began operations last week, and is now in complete working order. The mill is of the latest type, with a capacity of forty tons of seed a day. The company has a capital of $50,000, and operations have been commenced under very favorable auspices.

The Havens Cotton Oil Co. at Washington, N. C., has its new mill completed, and the plant is now in first-class condition. The machinery was started for the first time last week, and is daily receiving a supply of cottonseed. The plant is owned entirely by local capital, being well equipped throughout, costing over $70,000.

The price of cottonseed in Mississippi has advanced from $1 to $2 per ton during the past week. The oil mills in that State are now paying $13 and $14 per ton for seed, and some of the mills located in unfavorable seed territory are offering $15 per ton. It is stated, however, that unless the market for refined products rallies within a few days these prices cannot be maintained.

The following quotations were reported at Galveston, Texas, last week for cottonseed products: Exporters' prices were 29 cents for prime crude oil, loose, f. o. b. Texas mills, November, and prime refined oil, November, 36½ cents; prime cottonseed cake, $22.75 f. o. b. Galveston, November, and prime cottonseed meal, $23.50 f. o. b. Galveston, November, and bolted meal, $24; linters f. o. b., compressed, Galveston, choice, 3⅝ cents; A, 3¼ cents, and B, 2⅞ cents.

The Florida Cottonseed-Oil Mill at Jacksonville, Fla., it is expected will commence crushing about the 15th inst. The plant itself is practically completed, but connections with the Seaboard Air Line and Plant system by switches are being made and other minor details being arranged. The plant has a capacity of eighty tons of seed a day. The Florida Cotton-Oil Mill is owned by Tennessee capitalists, who also own another mill near Tallahassee. Mr. G. N. Henderson is president of the company, and Mr. J. J. Logan, general manager.

The Southern Cotton Oil Co. will have an exhibit at the South Carolina, Interstate and West Indian Exposition. The company will show the process of extracting oil from cottonseed and the uses to which it is put after expressing. Among the features which will be brought out prominently will be the exhibit of the various qualities of soaps into which cottonseed oil enters as a principal ingredient. The Wesson Oil Co. of Savannah will also make a fine display of its goods, paying especial attention to the salad and cooking oils manufactured from cottonseed.

The following are the official quotations of cotton and cottonseed products, as posted at the New Orleans Cotton Exchange on the 4th inst.: Prime refined oil in barrels, per gallon, 36 cents; off refined oil in barrels, per gallon, 35 cents; prime crude oil, loose, per gallon, 30 cents; off crude oil, loose, per gallon, 29 cents; prime cottonseed cake, per ton of 2240 pounds, $25.25; prime cottonseed meal, per ton of 2240 pounds, $25.25; soap stock, per pound, 1.25 cents; linters, choice, per pound, 3¾ cents; A, 3¼ cents; B, 2¾ cents; C, 2½ cents; cottonseed in sacks delivered at New Orleans, per ton of 2000 pounds, $14; in bulk delivered at New Orleans, per ton of 2000 pounds, $13.

Cold Storage at Lynchburg.

The business of Messrs. Armour & Co. of Chicago has increased largely in the Southern territory, which the firm supplies from its branch at Lynchburg, Va. Because of this it has been decided that extensive facilities be provided for cold storage. Site has been purchased 50x175 feet in extent, and on it will be erected modern buildings for a plant. The equipment of machinery to be installed will include a 50-ton ice-making machine for providing cold storage and a cooler for holding about seventy-five carcasses of beef cattle; three smokehouses, each 9x10 feet, will also be provided. It is further contemplated by the Armours to provide cold storage for the use of local dealers in perishable product.

The Algiers Dry-Dock.

The United States naval dock built for the Algiers station at New Orleans by the Maryland Steel Co. of Sparrow's Point has reached New Orleans in safety, and was welcomed by the United States congressmen residing in New Orleans, the mayor of the city and other officials, the day being observed as a general holiday and marked by a parade. The successful towing of the larkest floating dock from Baltimore to New Orleans at a speed of four miles an hour is a feat paralleling that of its construction.

Another Dry-Dock.

The immense dry-dock that has been in course of construction at Baltimore, Md., by the Wm. Skinner Shipbuilding & Dry-Dock Co. is now nearing completion. It is 600 feet long, 125 feet wide at the top, 23 feet deep, and cost about $300,000. Channel improvements are being made by the company to facilitate the dock's use.

It is announced that a large body of real-estate men from Iowa, Illinois, Kansas and other Western States will make a trip through the Mississippi valley and the Southwest during the latter part of this month.

PHOSPHATES.

Phosphate Markets.

Office Manufacturers' Record,
Baltimore, Md., November 6.

There is a fair demand for phosphate rock in the local market, and values continue steady. Fertilizer manufacturers from out of town have recently been buying more freely. The charters reported for the week are as follows: Bark Antioch, 869 tons, from Port Tampa to Philadelphia with phosphate rock at or about $2; schooner Edith G. Folwell, 1051 tons, from Port Tampa to north of Hatteras with phosphate rock at $1.90, and schooner Annie C. Grace, 454 tons, from Cartaret to Wilmington with acid phosphate at 75 cents. The movement at mining districts in the South has been for the most part fairly active. In Tennessee there is a material increase in the volume of business in and around Mt. Pleasant. All the prominent companies have plenty of orders, and the indications are that values for 1902 will be higher. The export business is especially heavy, and shipments through Pensacola during November will be larger than usual. Florida phosphate rock is in good demand, the foreign inquiry being quite brisk, and shipments from the ports for October were good. High-grade Florida rock going out of the port of Savannah during October amounted to 20,872 tons, and for the ten months ending October 31 the amount shipped was 134,910 tons. South Carolina rock is in better demand from foreign sources, and mining on the Ashley river is being pushed with considerable enterprise.

Fertilizer Ingredients.

The market for ammoniates has ruled fairly active during the week, and the demand from Southern sources is especially brisk. From the East the inquiry is moderate. Messrs. Thomas H. White & Co., in their circular for October, issued on the 1st inst., report the market as follows: "Since October 1 ammoniates have been fairly active. The advance in the cotton market early in the month stimulated Southern buyers into activity, and there was a good general demand from other sections. The usual offerings at this season of the year of packers' tankage products for the next six or twelve months have chiefly engaged the attention of the larger trade. Several contracts have been sold at $18 to $18.50 f. o. b. basis Chicago for standard 9 per cent. and 20 per cent. grade of crushed tankage. The tone is somewhat tame at the close, and two or three important offerings are still seeking customers, being held by sellers at extreme figures."

The following table represents the prices current at this date:

Sulphate of ammonia (gas)	$2 75	@ 2 77½
Nitrate of soda, spot Balto	1 90	@ 1 92½
Blood	2 27½	@ 2 30
Azotine (beef)	2 30	@ —
Azotine (pork)	2 30	@ —
Tankage (concentrated)	2 17½	@ 2 20
Tankage (9 and 20)	2 25 & 10	@ 2 30 & 10
Tankage (7 and 30)	20 00	@20 50
Fish (dry)	26 00	@27 00

Phosphate and Fertilizer Notes.

The steamship Newton Hall cleared last week from Savannah, Ga., for Bremen with 2942 tons of phosphate rock, valued at $29,420, and other cargo.

Messrs. J. M. Lang & Co. of Savannah, Ga., reports the shipments of high-grade Florida phosphate rock from that port for the month of October at 20,872 tons; amount previously reported for the year 114,038 tons, making a grand total for ten months ending October 31, 1901, of 134,910 tons.

The first consignment of phosphate rock ever shipped from Norfolk to a Japanese port was that on board the British steamship Lowther, which sailed last week for Hioga, Japan. The cargo of rock was taken aboard at the Southern Railway's Pinner's Point pier and at New York before the steamer arrived at Norfolk.

The Bullock Fertilizer Works at Baltimore, Md., was sold last week to the Universal Centrifugal Co., which has been occupying a part of the premises for some time past. The property contains two and one-half acres on Gwynn's Falls, near Columbia avenue, and carries with it a three-story brick factory, machinery and boilers.

Shipments of Tennessee phosphate rock from the port of Pensacola for the month of October aggregated 7721 tons. Work at the mines at Mt. Pleasant is picking up very decidedly, and shipments of rock increasing. The Central Phosphate Co. is running day and night, and the Tennessee Phosphate Co. is working a large force moving a heavy export order to go through Pensacola.

"Peach Growing" is the title of the seventh of a series of pamphlets setting forth the agricultural and industrial opportunities along the line of the Nashville, Chattanooga & St. Louis Railway Co., prepared by Col. J. B. Killebrew, the industrial and immigration agent of the company. This pamphlet deals particularly with the Sand Mountain district and the Western Atlantic district of the system, and tells what has already been accomplished there in peach growing. But the pamphlet does not stop at that. It is in reality a concise, practical handbook for peach growing, based upon careful study of the industry in New Jersey and Delaware and along the line of the Nashville, Chattanooga & St. Louis Railway, and in addition pointing out the lands adapted to the growing of peaches and to nurseries where the trees may be conveniently secured.

In announcing the plans of the new Cape Fear Fisheries Co. of Wilmington, N. C., in our last week's issue the capacity of the proposed plant was overstated by an error of such a character as to be patent to any reader at all acquainted with the manufacture of oil and fertilizer scrap from the menhaden fish. The daily output will be 300 barrels of oil and 600 tons of scrap.

During October 155 building permits were issued at Atlanta, Ga., representing investments amounting to $606,497. On October 31 a permit for the Century Building, which is to cost $450,000, was issued. But excluding that, the permits for the month represented $33,564 more than the permits in October, 1900.

El Alba, another addition to the fleet of the Morgan Line, plying between New York and New Orleans, has been launched at the Newport News shipyard. This is the twelfth ship to be constructed for the Morgan fleet at the yard. She is 404 feet in length, and will cost $600,000 when completed and ready for service.

On October 31 seven steamers cleared from Galveston, Texas, with cargoes valued in all at $1,620,177. They included 30,233 bales of cotton, 97,721 sacks of cottonseed-meal cake and 11,499 barrels of cottonseed oil, and considerable quantities of lumber and staves.

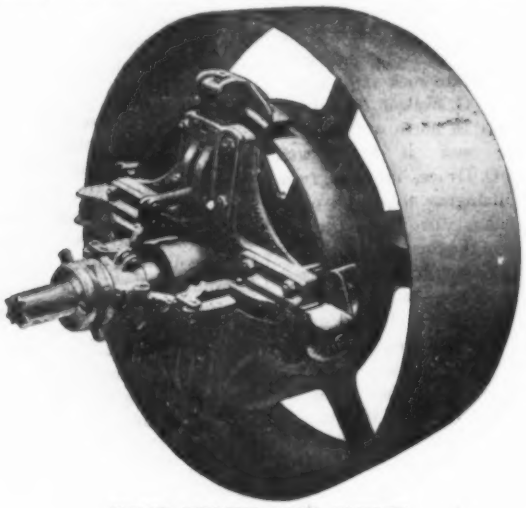
The Tennessee Mining Association, representing the active workers in the mines of the State, has been organized, with F. P. Clute of Glenmary, president; R. A. Shiflet, the State commissioner of labor, secretary, and J. C. Norton of Soddy, treasurer.

It is estimated that the Texas rice crop this year will amount to 900,000 sacks.

MECHANICAL.

Smith Rim-Friction Clutch.

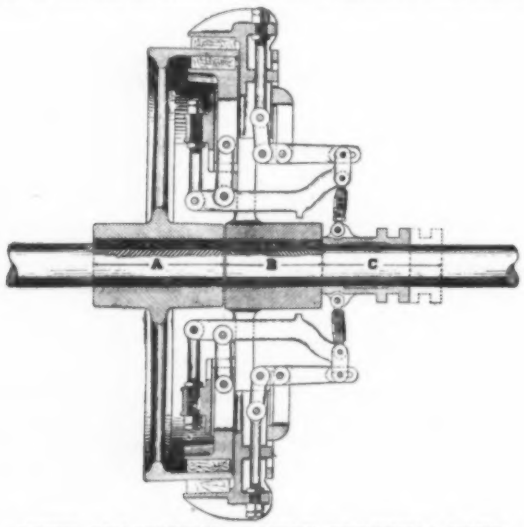
The accompanying illustrations give an idea of an invention which is attracting much attention among textile manufacturers in general, owing to its value. It is manufactured by the James Smith Woolen Machinery Co. of Philadelphia,



SMITH RIM-FRICTION CLUTCH.

and is known as the Smith Rim-Friction Clutch. It is especially adapted for high speed, is simple in mechanism, most powerful in grip and release, and the necessity for repairs is reduced to a minimum. There are no springs, and the wooden shoes can be removed without disturbing the clutch.

The pressure on the rim on both lower



SMITH RIM-FRICTION CLUTCH—SECTIONAL VIEW.

and upper sets of shoes is always the same and constant, the outside and inside jaws having independent adjustment. The turnbuckle adjustment insures accuracy, it being especially adapted for high speeds and heavy duties. The device is made in all sizes for various horsepowers.

A Valuable Preparation.

A new method of preparing lime has been developed, and very extensively used in the middle West during the past year, and this product, having fully proved its strength and durability, is now being put on the Eastern market under the trade name of "Limoid" by the Charles Warner Company of Wilmington, Del. "Limoid" is manufactured from the pure lump lime burnt at Cedar Hollow, Chester county, Pennsylvania. In Philadelphia and contiguous territory the Cedar Hollow lime requires no introduction, as it has made a reputation for itself during the past hundred years. With this material forming its major element, "Limoid" is prepared in such manner that further slacking is unnecessary. The material is in a bulky, powdered condition, and by the simple addition of water in sufficient quantity to form a paste of the desired consistency it is ready for immediate and safe use with the same ease as cement.

The special method of treating the lump lime saves all loss from air-slacking, which in itself is a very valuable feature. Its characteristics permit its use without the slightest danger of slacking or pitting on the wall, and as may be supposed from the above description, no heat whatever is generated when the putty is made up. The manufacturer of "Limoid" is exercising the same care regarding its chemical composition that has been found so desirable in the best-regulated cement mills, namely, to make frequent tests and analyses of the material in the different stages of its manufacture, so that absolute uniformity of product will result at all times. The severe tests made fully illustrate that this preparation is absolutely no experiment, and a trial will fully demonstrate its points of merit. For any of the chemical or manufacturing lines wherein lime is now being used, and where a dry, inert, thoroughly hydrated and carefully seasoned preparation of lime is required, "Limoid," it is believed, cannot be excelled.

The Charles Warner Company is largely interested in the extensive plant at Cedar Hollow, Pa., as well as being general sales agent for several other brands of lime, crushed stone, Nazareth Portland cement and building materials in general. Offices are located in New York, Philadelphia and Wilmington, and "Limoid" will be so placed on the market as to be within the reach of any possible users east of the Alleghany mountains.

The Star Indicator.

Wishing to make its line of goods even more complete, the Star Brass Manufacturing Co. of Boston has brought out the Star Improved Steam Engine Indicator, and has equipped its shop with all the machinery and tools necessary for their production. Especial attention has been paid to the springs, and apparatus, electrically controlled, has been devised for testing them in the best manner.

Those familiar with the Thompson indicator will note a familiarity in the lines of the "Star," but this has been done on the principle of utilizing ideas that have proved their worth instead of striving to have new or different designs, regardless of utility. The pencil movement is of the Thompson pattern, chosen for its strength, durability and light weight.

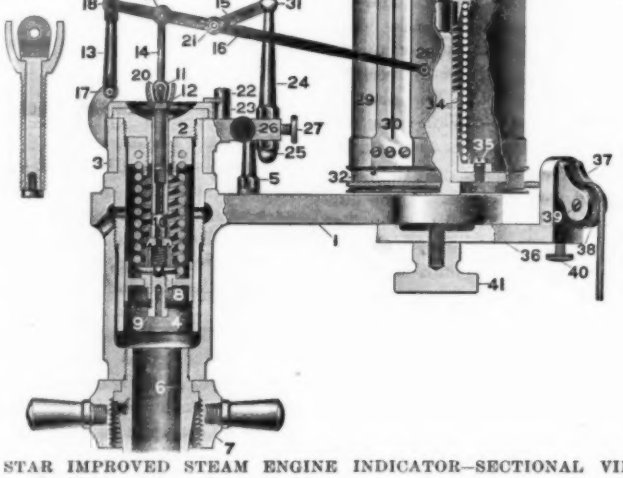
The springs have the ball at lower end, which has proved so satisfactory in years of service. The drum spring, as will be noticed, is a plain helical coil—another device which has proven its worth in actual service. The interior cylinder or shell carries the cap at the top, always insuring alignment between piston and rod. This in nowise interferes with removal of shell, should it become necessary. Around this shell is a steam space, which, being filled with live steam, jackets the working cylinder and secures uniform temperature and expansion.

A feature which will be appreciated by those who have vivid but unpleasant memories of burned fingers is the non-conducting cover over the cap at top of cylinder. This enables it to be removed both rapidly and with comfort.

A vent tube is also provided for carrying away the waste water and steam, and avoids the necessity for acrobatic performance in keeping the hand away from the hot drippings. The vent tube extends below the body of indicator, keeping the drips entirely out of the way. As it is sometimes desirable to vary the position of the atmospheric line on an indicator card, provision is made for adjusting the piston rod by means of the swivel head shown.

The pawl and ratchet detent motion has been replaced by the well-known ball form of friction clutch, not shown in detail cut. The whole instrument has received careful attention, from the body to the smallest part, and the design denotes strength as a foundation for its other good qualities. The maker is also prepared to furnish complete outfits, from indicators to blanks for taking cards.

THE STAR IMPROVED STEAM ENGINE INDICATOR.



THE STAR IMPROVED STEAM ENGINE INDICATOR—SECTIONAL VIEW.

The Cincinnati, Hamilton & Dayton Railway Co. has placed additional orders with the Barney & Smith Co. at Dayton, Ohio, for 250 70,000-pound capacity box cars. This completes orders for 750 cars, 500 of which are being built by the Barney & Smith Co. and 250 by the American Car & Foundry Co. at Detroit. The cars will be delivered prior to January 1, 1902.

Mr. L. W. Baer of 158 Edgewood avenue, Atlanta, Ga., has invented a device by which a motorman of a street car can change the switch without leaving the car platform and can throw the switch into its former position. Mr. Baer has secured patents, and is desirous of corresponding with manufacturers and others interested.

Southern inventors of novelties in wood may find it to their advantage to correspond with the Ohio Pulley Co. of Marion, Ohio, which is in a position to take up the manufacture of various mechanisms. Its plant is prepared to manufacture specialties made exclusively of wood, having the necessary machinery.

Hand Bending Tools.

The bending tools manufactured by the Wallace Supply Co. of 607 Garden City Block, Chicago, Ill., have attracted widespread attention among mechanical experts, owing to the remarkable variety of shapes which can be made with them by hand. Their advantages are recognized at a glance by anyone familiar with machine-shop practice, and this is why they are being used so extensively in blacksmith shops, foundries, vehicle shops, plants for making agricultural implements, scrap rolling mills and other works.

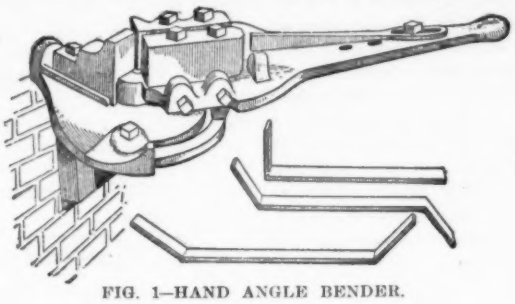


FIG. 1—HAND ANGLE BENDER.

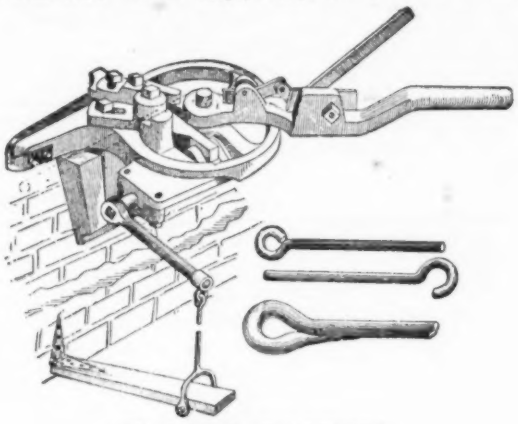


FIG. 2—HAND EYE BENDER.

The illustrations reproduced show the hand angle bender and hand eye bender, which are fair samples of the apparatus. While these appliances are especially adapted to shops and factories having too little work of one kind to justify a power machine with a special set of dies or having no power to operate heavy machinery, they are found to be convenient and valuable in large shops, as they are more easily adjusted for different classes of work than are power machines, and can be operated with great rapidity.

The hand angle bender (Fig. 1) will form any angle up to 90 degrees. The adjustment is quickly and easily accomplished. To set the machine for bending a right angle the movable die is placed back the thickness of the stock both ways from the other two dies. For angles less than 90 degrees the front die is set ahead or toward the center pin far enough to allow the corner to be tight against the stationary die at the corner of the bend. Special dies for bending odd work, such as dashboard frames, etc., are supplied to match the specifications sent with the order. Light stock can be bent cold.

This bender can also be used to make ring and hand benders of any size, from one inch to twenty inches in diameter, also hinge eye benders. Two sizes of this machine are made. No. 1 takes iron or steel up to five-eighths inch round or two inches wide by three-eighths inch thick. No. 2 bends stock four inches wide by one-half inch thick, flat bend, or one and one-half inches by three-eighths inch edgewise, or angle iron up to 1½x1½x¼ inch.

The hand eye bender shown in Fig. 2 is also made in two sizes. No. 1 machine takes stock up to one-half inch in thickness and No. 2 up to three-quarters inch. Perfect eyes, hooks, loops and rings of any style and almost any size can be bent on this machine. Its work is very rapid, and one man can form as high as 1200 pieces from one-half-inch stock in one day. The samples of work shown in the illustration are an eye shut tight, an eye ready to receive a link or ring, and a lip eye closed ready to weld. It is stated that this bender can be adapted with little trouble to so many forms of eye work that in implement and similar manufacturing shops it dispenses with the use of power tools for such work. Both these machines are fastened, movably, to brackets, which may be secured to forge frames or placed in any other location in the shop convenient to the operator. An important feature of the tools, it is pointed out, is that experts are not required to operate them, but that any handy man can use them.

The value of exports from Norfolk in October this year was $766,041, an increase of more than $130,000 over October, 1900.

An Up-to-Date Enterprise.

The State of Pennsylvania contains a number of the most important industrial centers in the United States, among them the city of DuBois. Although not so large as some of the other communities, it has a reputation not only in this country, but in Mexico and other foreign markets, for the high grade of the machinery and other products which are shipped from it. This reputation is due in a large measure to the DuBois Iron Works, which may be considered one of the representative industries not only of the city, but of this part of the country. Making a specialty of stacks, sheet-iron work, conveyors, tubular boilers, saw-mill machinery, as well as apparatus for power transmission, the company is also an extensive jobber of mine and mill supplies and building material. Its plant, which is one of the most extensive in Western Pennsylvania, is practically new, and thoroughly equipped with the best and most modern machinery, while the heads of the various departments are men who have a wide reputation for their experience and ability. The company is prepared not only to build anything required in the way of mining, tannery and saw-mill machinery and power transmission at short notice, but has special facilities for carrying out contracts to erect and equip plants of any size.

The history of the DuBois Iron Co. is of unusual interest, as it shows what strict attention to business, combined with thoroughness and the application of modern principles, can accomplish. In every successful enterprise one man can usually be found who is in a great measure responsible for it. In the case of the DuBois Iron Works the management of Mr. F. G. Lauer is conceded to have had much to do with the remarkable results which have been attained.

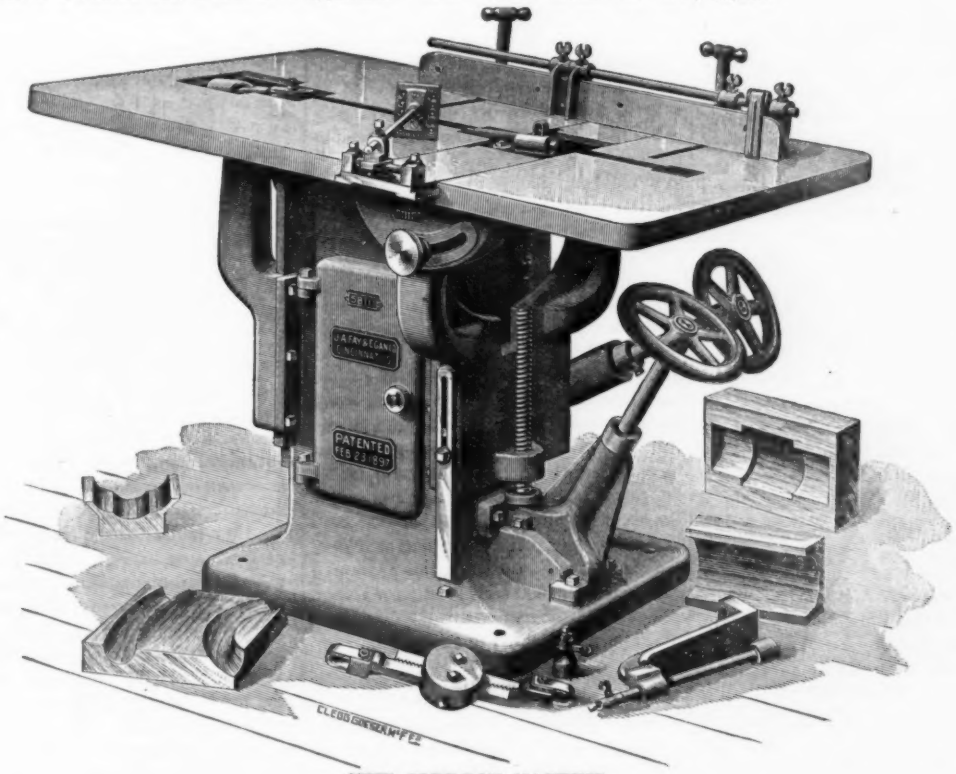
New Core-Box Machine.

The machine herewith illustrated represents a combination of advantages which will be appreciated by all who use such apparatus. The maker claims for it speed and accuracy for making all kinds of cored boxes and work that requires recessing, duplicating, etc.

The machine will cut semi-circular core boxes of any length, and from one to twenty inches in diameter. Semi-circular core boxes closed at the ends, with recesses of different diameters, can be made rapidly and with corners of any desired shape. On patterns with internal curves, such as the inside of staves, coves and cutting out the under side of bosses to fit on rounded patterns, the work can be produced very rapidly. For making large fillets on engine and pump frames and similar patterns it is unsurpassed, and is a great saving over the old methods of working the curve.

It is not necessary to use clear lumber when making the cuts on this machine, as, owing to the construction of the cutters, knotty lumber, cutting with or across the grain, a smooth surface is secured. A radius attachment goes with the machine, by the use of which circular core boxes are correctly produced, such as elbows, etc. The heads used may be set for different diameters, being so arranged and made that the bits are adjustable. By this arrangement a smaller number of heads need be used to accomplish a wide range of work.

Cut showing the machine, particulars and lowest terms will be furnished by the maker, J. A. Fay & Egan Co., of 270 to 290 West Front street, Cincinnati, Ohio.



NEW CORE-BOX MACHINE.

To Develop 6000 Horse-Power.

Fred. J. Coxe of Wadesboro, N. C., projector of the Bluitt Falls Electric Power Co., announced last month as applying for charter, writes that the company has organized with himself as president and treasurer; Robert L. Steele of Rockingham, N. C., secretary, and Samuel T. Stowe of Mecklenburg county, North Carolina, general superintendent. Mr. Coxe states that the falls will afford 6000 horse-power in the dryest season of the year, and that this power, when developed, is to be transmitted electrically to Wadesboro, Rockingham and Hamlet for utilization by mills, factories, railways and other industrial plants. Endeavors will be made to locate new establishments to assist in utilizing this power when it is ready. The company has capitalized at $250,000.

During the ten months ended with October the building permits granted at Memphis, Tenn., represented $2,619,378.33, which was $745,598.88 more than the amount represented in all the permits in the year 1900.

LUMBER.

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

LUMBER MARKET REVIEWS.

Baltimore.

Office Manufacturers' Record,
Baltimore, Md., November 6.

The movement throughout the local lumber trade of this port is fairly active, and the volume of business an average one for this period of the season. The trade of this port has been holding its own during the year, and the demand during the past sixty days indicates a substantial business during the winter months. It is stated that the receipts of lumber at Baltimore during the year aggregate 371,000,000 feet, and the foreign exports to the United Kingdom and continental ports aggregate 70,000,000 feet. In the various commercial woods on the local market North Carolina pine seems to be maintaining its popularity, and the situation at milling points in Virginia and Eastern Carolina is very satisfactory to manufacturers. Stocks are very much reduced under a good demand from the usual sources, and the price-list as revised by the North Carolina Pine Association is more in touch with the conditions surrounding the market. The market for white pine is very steady, with considerable stock moving. Georgia pine is in fair receipt, and the demand fairly active. Cypress is selling more freely. The movement in hardwoods shows an improvement in the volume of trade, and values all along the line are a shade firmer. Oak, walnut, ash and other woods are in good demand, while poplar is firm and moving freely. The foreign export business in hardwoods shows very little improvement, and, owing to the dull market abroad, the volume of business continues light.

Savannah.

[From our own Correspondent.]
Savannah, Ga., November 4.

The local lumber market at the moment is reported in a very healthy condition, and the movement active, showing a good substantial volume of business. During the past week about 2,500,000 feet of lumber left this port, against 3,912,252 feet for the previous week. The inquiry is more general than it was thirty days ago, and besides a good domestic demand, there is also considerable foreign business expected. Prices continue to rule firm for all desirable grades of lumber, and holders are not disposed to make long-time contracts at present figures. The Georgia Saw-Mill Association will hold its November meeting on the 12th inst., when it is expected a number of matters relating to the industry will receive attention. At nearby ports of Georgia the lumber industry is showing up well, and at Brunswick especially the receipts and shipments of lumber are larger than usual. At St. Simons and points in the interior saw-mills are all rushed with orders. The crosstie industry is very brisk, and the demand from railroads is urgent, and shippers find some difficulty in getting cargoes together promptly. Coastwise freights are steady, and charters last week show rates as follows: Schooner M. A. Willey, 371 tons, from St. Simons to New York with lumber at $5.25; schooner John Rose, 595 tons, Savannah to Philadelphia with lumber at $5; schooner E. B. Douglass, Savannah to Philadelphia with crossties on private terms; schooner C. D. Hall, 375 tons, Brunswick to New York with lumber at $5.25; schooner J. B. Manning, 1031 tons, Brunswick to Philadelphia or New York with crossties at 14½ cents, and schooner William Neely, 792 tons, Brunswick to Perth Amboy with crossties at 14 cents.

Jacksonville.

[From our own Correspondent.]
Jacksonville, Fla., November 4.

The month of October has been one of considerable activity in lumber circles in this section. The shipments of lumber from this port for October aggregated 10,343,167 feet, against 9,284,851 feet for September. The coastwise shipments for the month were 9,757,000 feet of yellow pine and 347,000 feet of cypress. The shipments of crossties amounted to 25,400, and of shingles 2,166,000 and 3700 bundles. A shipment of 249,167 feet of lumber was made during the month to Liverpool. The market during the month has been quite active, the demand being better than usual. Mills at this port and at adjacent points have all been running at their full capacity, and stocks are not by any means excessive. The Clyde Line steamships have had a most excellent freight business during the month of October, and have carried a full complement of lumber and other wood products among their various cargoes. Yesterday was the semi-anniversary of the great fire which swept the city six months ago, and the progress made in building has been most remarkable. The demand for lumber for local purposes is still active, and the number of permits for buildings show an increase each week. The total number of buildings being erected has reached 1158, and soon the 2000 mark will be reached. Lumber shipments have opened brisk for the present month, the Clyde steamship Seminole leaving on Saturday with 300,000 feet of lumber, 2500 crossties and 4500 bunches of shingles, and the Comanche with 300,000 feet of lumber and 4000 crossties. A number of sail vessels are due to arrive to load lumber during the month, and indications point to a very active trade during November.

Mobile.

[From our own Correspondent.]
Mobile, Ala., November 4.

During the past week the movement in wood products has been of an average volume, and the market has ruled fairly active for both lumber and timber. The timber market especially shows much better figures, sawn timber being quoted at 13½ to 14½ cents per cubic foot, and hewn timber at 13 to 14 cents. Receipts continue very light, and stocks considerably reduced. Shipments of sawn timber for the week aggregated 165,942 cubic feet for Cardiff, Wales, and Rotterdam. The shipments of sawn timber for the season aggregate 2,398,949 cubic feet, against 266,838 cubic feet for the same period last year. The hardwood business is fair, and values very steady. Oak is in limited demand at 15 to 18 cents per cubic foot, and hewn poplar at 12 to 12½ cents per cubic foot. The lumber trade is active, and all mills in the interior are busy sawing, mostly for the domestic trade. At this port mills find timber somewhat scarce, logs bringing $8 to $9 per 1000 superficial feet, with receipts light. During the past week the shipments amounted to nearly 2,500,000 feet, mostly for Cuban and South American ports. Coastwise and foreign freights are unchanged.

Memphis.

[From our own Correspondent.]
Memphis, Tenn., November 4.

The demand for hardwood lumber in this market during the first few days of November has proven somewhat better than during October. The exporters are calling for stuff with slightly increasing freedom. Some one or two of the trade here who were willing to part with large stocks at concessions in prices have made good shipments to Liverpool and other ports. There is no dearth of orders—it is simply the old story of buyers and sellers being apart and business consequently restricted. In the domestic West and middle West there has been a splendid call for plain and quartered white oak, plain red oak, poplar, cypress and some gum. The demand in this direction, in fact, is rather better than the trade as a whole has hitherto experienced. In the domestic East business is still rather slack. Prices, as a rule, are pretty firm, with sellers showing little disposition to shade values, because of their ultimate belief in improvement in the hardwood situation. Stocks in some directions are small, though it is an open secret among producers of hardwoods that the offerings either in this center or in the other large producing centers of the country are not nearly so large as buyers seem inclined to believe. The woodworking plants are still engaged to their full capacity. Plants engaged in the manufacture of cooperage stock are even busier than they have been reported heretofore. The manufacturers of boxes and box shooks are well employed on packing-house boxes, some of them running fourteen to eighteen hours a day, though the mills of these manufacturers are invariably closed down. The building operations continue phenomenally large. This statement carries with it the position of the manufacturers of all classes of building woods.

Beaumont.

[From our own Correspondent.]
Beaumont, Texas, November 2.

Probably the greatest demand for lumber, considered in every respect, is coming at the present time from Mexico. Few people realize the amount of lumber that this republic, with its 15,000,000 people, consumes every year, and fewer still know that the bulk of it is furnished by the Texas and Louisiana mills, and almost altogether in long-leaf lumber. Mexico is a country with many mines, copper, silver and coal being the principal products in this line. Every one of these mines is a great consumer of lumber, and their requirements in this line form the greatest demand coming from the republic, with the exception of railroad material. The lumber demands of the Texas dealers during the past ten days have not been as great as it was thought would be the case a few weeks since. The great shortage, or alleged shortage, of the cotton crop is, of course, the prime factor in this condition. The call for lumber has equalled the output of the mills, so that there has been no increase in the stocks at the mills. So long as the relative proportion between demand and supply exists, as is the case today, there is not likely to be any great decline in prices. The figures that prevail today are probably 50 cents to $1 per 1000 feet less than have been obtained during the past three months, but it is extremely improbable that there will be any further decline until the stocks at the mills have materially increased. The principal part of the demand for lumber today from Texas dealers originates in city building projects, while the country is scarcely buying anything. It is this condition which impels those thoroughly versed in the present situation to state that there will be a better demand during December and January, for by that time the exact effect of the cotton shortage will be known. The Western trade is not at all satisfactory. There are quite a number of enquiries, but little business results therefrom. The Texas and Louisiana long-leaf mills will not sell their lumber below the July 18 list, issued from St. Louis, while it is true that many of the Arkansas mills will, which, of course, accounts for where the business is going. The present basis of prices in Texas, $14.50, will undoubtedly hold good for the remainder of the year for Texas and Mexican business, and the trade in the Western market will be allowed to go whither it will. But whatever the condition of the yard trade is, there is no doubt as to the situation in bill stock. The railroads of Mexico and Texas are requiring a great deal of lumber, particularly in the way of ties, stringers and other bridge stock. This demand is great, and there is not the faintest indication of a decrease in price. Heart ties are firm at $11.50 to $12, sap ties at $9.50, stringers $18.50 for 32-foot and $12 for 12-inch timber.

Lumber Notes.

Shipments of lumber from the port of Charleston, S. C., last week aggregated 1,460,000 superficial feet.

The Industrial Lumber Co. of Beaumont, Texas, has amended its charter by increasing its capital stock from $200,000 to $300,000.

Shipments of lumber from the port of Mobile, Ala., last week aggregated 1,129,012 superficial feet, and sawn timber 165,942 cubic feet.

The shipments of lumber and timber from the port of Pensacola, Fla., last month aggregated 23,875,000 feet, oak staves 29,000 and oak timber 1825 cubic feet.

Col. T. T. Adams of Illinois has purchased 95,000 acres of timber land known as the Peck entry, lying near Del Rio, Green county, Tennessee. It will be developed at once.

The saw and planing mill owned by L. W. Cordell at Dunlap, Tenn., together with a large quantity of lumber, was destroyed by fire on the 1st inst.; loss about $2000, with no insurance.

The Vestal Lumber Co. of Roane county, Tennessee, has been chartered, with a capital stock of $25,000. The incorporators are G. E. French, C. Vestal, Sam Price, A. K. Gleaves and D. A. Plant.

The mill and factory of the Plaquemine Stave & Heading Co., Limited, near Plaquemine, La., was destroyed by fire last week. The loss is estimated at over $10,000, with $7000 insurance. It will be rebuilt.

The secretary of the Baltimore Board of Trade reports the receipts of lumber at that port during the present year at 371,000,000 feet, and foreign exports to United Kingdom and continental ports at 70,000,000 feet.

The total shipments of lumber from the port of Jacksonville, Fla., for the month of October were 10,343,167 feet, of which 10,104,000 feet were coastwise and 239,167 were foreign. Shipments of crossties for the month amounted to 25,400, and of shingles 4,500,000.

The Bradley-Watkins Lumber Co. of Minneapolis, Minn., has opened an office in Fernandina, Fla., for the handling and shipment of crossties and lumber. The company is a prominent one in the Northwest, and its operations in this new field are expected to be of considerable volume.

The Empire Lumber & Investment Co. of Glynn county, Georgia, has been chartered, with a capital stock of $5000, with privilege of increasing to $50,000. The incorporators are Lester Duryea, E. A. Silvers, W. B. Robinson, Jr., and W. F. Anderson. The principal office will be located at Brunswick.

Judge D. B. Redwine and associates have sold to F. J. Pischel of Chicago 300,000 trees standing on the waters of the Kentucky river in Breathitt, Perry, Knob and Letcher counties. The work of branding the trees will begin immediately

near Hazard, in Perry county. The timber is said to be among the finest in Eastern Kentucky.

Messrs. Hudgins & Kilpatrick, a lumber firm in Sumner county, Tennessee, sold last week some of the finest specimens of poplar ever grown in Middle Tennessee. They were the product of one tree measuring eight-six lineal feet, and the first log, twelve feet in length, was five feet one inch in diameter. The firm realized $125 on the product of this tree.

It is stated that the Gilkey-Anson Company of Murrell, Wis.; the Stewart-Alexander Lumber Co. of Warsaw, Wis., and the Murrell Lumber Co. of Murrell, Wis., have purchased from the Haywood Timber Co. of Davenport, Iowa, 81,000 acres of timber lands situated in Grant, Hot Springs and Dallas counties, Arkansas. The price paid is said to be $1,125,000.

The Brookpark Lumber Co., located at East Enterprise, Miss., whose members are principally from Minneapolis, Minn., and who purchased recently an interest in the R. J. Berry Lumber Co., has about completed a building 20x150 feet for the purpose of drying lumber before placing it on the market. The daily output of the company is from 50,000 to 75,000 feet.

It is stated that the meeting of the turpentine operators last week at Pensacola, Fla., proved a decided success. The object of the meetings of turpentine operators is to establish a fixed amount to be paid for labor and be prepared to control the present output of turpentine and rosin. The officers of the association are A. D. Covington of Bristol, Fla., president, and John Powell of Hunter, secretary.

Bond Bros. of Pittsburg, who recently purchased 13,000 acres of timber land in Garrett county, Maryland, have, it is said, secured right of way from 34 water station, on the Baltimore & Ohio Railroad 17-mile grade, to the Mary Wilt farm, a distance of about three miles, where they have selected a mill site and expect to commence grading a standard-gauge railroad next week. When the saw-mill is completed it will be the largest timber plant in the State, and will employ about 500 men.

TRADE NOTES.

Heating Contract Awarded.—The Peck-Hammond Co., Cincinnati, Ohio, has been awarded the contract for heating the Shearer Biblical Hall at Davidson, N. C.

Old Metals.—Messrs. Pate & King of Weldon, N. C., have added a branch for buying and selling old brass, copper, iron, etc., and will be glad to correspond with parties who want such material.

Eclipse Pulleys.—Mill men and others will be interested to know that Messrs. B. F. Starr & Co. of Baltimore have been appointed exclusive agents for the Eclipse wood pulleys in Delaware, Maryland, Virginia and other Southern territory. Messrs. Starr & Co. will be prepared to furnish pulleys of all sizes at short notice.

In New Quarters.—The Ellington Manufacturing Co. has found the orders for its excavating and conveying machinery, as well as engines and forgings, increasing so rapidly that it has been obliged to remove its works to a larger site at Quincy, Ill., where its capacity for production will be greatly increased.

Touring the South.—A representative of the Voorhees Rubber Manufacturing Co. of Jersey City, manufacturer of the noted Nubian packing, is now making a tour of the South and Southwest in the interest of this specialty. Mr. Covill, the representative in question, has many friends in this section of the country.

To Railroad Men.—Messrs. Robinson & Orr of Pittsburg, Pa., have about 500 tons of second-hand 60-pound steel rail for sale, which they can send to any portion of the South on short notice, as the material is conveniently located. This fact will be appreciated by railroad men who have met with delays in having orders filled direct from the mills.

Chance for Investment.—In the advertising columns Mr. E. L. Beard of Academy, W. Va., announces that he has what is known as the Mountain Marble for sale in West Virginia. Anyone who wishes to engage in quarrying would do well to correspond with him. Mr. Beard also has some desirable coal, timber and other property for sale.

Valuable to Contractors.—The Drew Machinery Agency of Manchester, N. H., has a quantity of material for contractors, including steam shovels, floating apparatus, locomotives, cars, hoisting engines, stone crushers, drills and piledrivers, which are to be sold immediately by order of the court. Further particulars will be found in the advertising columns.

Valuable Patents.—An opportunity to secure machinery for manufacturing lime-sandstone bricks, also an appliance for cleaning and renovating carpets, is afforded anyone who will correspond with W. R. B. Lockie of Liverpool, England. Mr. Lockie desires to dispose of the rights of these inventions in the United States, and has taken out patents in this country.

Prize Exhibit.—At the Buffalo Exposition the display of the A. B. Farquhar Company, Limited, of York, Pa., attracted special attention on account of the high standard of farm machinery and implements which it contained. The Pan-American authorities evidently agreed with the verdict of the public, as they awarded the company a gold and a silver medal for the display.

Many Southern Patrons.—That the apparatus manufactured by the P. H. & F. M. Roots Company of Connersville, Ind., finds favor in the South is shown by the recent orders received by Mr. H. M. Papworth, Eastern agent, at 109 Liberty street, New York. They include a large gas exhauster and engine for the city of Danville, Va., and the necessary pumps for an ice factory at Punta Gorda, Fla.

Large Orders.—The Ball Engine Co. of Erie, Pa., is evidently extremely busy, if recent orders which it has secured can be taken as an indication. They include engines representing 380 horse-power for the Latrobe (Pa.) Steel Co., 300 horse-power for the Sagamore Coal & Coke Co. of Bramwell, W. Va.; 225 horse-power for the Cloquet (Minn.) Lumber Co., and engines for the postoffice at Philadelphia, Pa.

Just What Is Needed.—The Morse automatic adjuster, which has been placed on the market by the Incandescent Electric Light Manipulator Co. of 116 Bedford street, Boston, Mass., is just what is needed in connection with hanging incandescent lamps. Users of these lights appreciate the invention, as the company has already a large demand for this article. Wherever displayed it has found high favor.

Increased Facilities.—The patrons of the Manufacturers' Advertising Bureau will be pleased to know that its business has increased to such an extent that it has been obliged to enlarge its headquarters at 126 Liberty street, New York. The new offices will afford it much better facilities for doing business. Mr. Benjamin R. Western, the founder of the bureau, is one of the pioneers in advertising and an authority in his line of work.

Bargains in Engines.—S. L. Holt & Co., 67 Sudbury street, Boston, dealers in second-hand machinery, have on hand for immediate delivery seventeen new automatic engines of various makes, 15 to 150 horse-power. Owners of steam plants desiring to get an engine, and a bargain, will do well to communicate with them. They also have for sale three 125-horse-power brick-set boilers, two 100-horse-power brick-set boilers and three 85-horse-power brick-set boilers, all in good condition and ready for immediate delivery.

Remington Means Worth.—One of the interesting displays at the New York Automobile Show is of the motor vehicles manufactured by the Remington Automobile & Motor Co. of Utica, N. Y. The company has made a display of its various styles of vehicles, which have already obtained a high reputation for durability and economy. The company also manufactures launches which are suitable for pleasure or business. A recent trip was made of a 20-foot Remington launch equipped with a four-horse-power motor between Utica and New York, and although the distance is 250 miles, the actual time was but thirty hours. The route was along the Erie canal and down the Hudson river.

As Might Be Expected.—The display of the Lidgerwood Manufacturing Co. of 96 Liberty street, New York, at the Pan-American Exposition was of such an interesting and instructive character that the exposition management appreciated it by awarding the company no less than six medals—four gold, one silver and one bronze. They were the highest awards made in each class. The display of the Lidgerwood Company included mining and hoisting engines, warship ammunition hoisters, also the noted Lidgerwood-Miller marine cableway for coaling at sea.

A Busy Concern.—Among the recent engine sales of Wm. E. Hill & Co., Kalamazoo, Mich., are the following: Thompson, Son & Co., 107 Liberty street, New York city, nineteen; Wickes Bros., Saginaw and Pittsburg, Pa., three; Caldwell Bros., Tacoma, Wash., five; American Engineering Works, Chicago, three; Henshaw, Bulkley & Co., San Francisco, Cal., nine; Withington & Cooley Manufacturing Co., Jackson, Mich., two; Buffalo Forge Co., Buffalo, N. Y., four; D. A. Tompkins Co., Charlotte, N. C., one; Reichman-Crosby Co., Memphis, Tenn., two; V. Lowener, Copenhagen, Denmark, one; S. Howes, London, England, two.

Reliable Specialties.—Power-users will be interested to know that Messrs. Coggins & MacBryde, located at 407 Continental Trust Building, Baltimore, represent some of the most reliable makers of valves for steam, water and gas, fire hydrants, cast-iron pipes and fittings, as well as steam and water-works supplies in general. They also have a line of steam, gas and gasoline engines bearing the stamp of manufacturers which have a high reputation, and are Southern agents for the famous Eddy valves. This firm is in a position to supply the apparatus referred to in the Southern market, and is prepared to take contracts to be filled on short notice and at very low prices considering the grade of the goods.

That Big Belt.—The 72-inch belt recently referred to as in the possession of Messrs. Joseph Meier's Sons of Newark, N. J., and which is claimed to be the first belt of the size ever constructed, has attracted much attention on account of its excellent condition after a term of service of over eighteen years. It weighs 3000 pounds, and required the centers of 315 hides to supply the necessary material. It was manufactured by the Helm Leather Belting Co., the predecessor of Meier's Sons, and the foreman of the present firm was the man who made the belt. It was placed in the factory of Messrs. Buchannon & Lyall at Brooklyn, N. Y., in 1883, and was practically in continual service up to a few months ago. Messrs. Meier's Sons have decided to cut it into smaller belts, owing to the condition of the material.

Orders from Abroad.—The New Process Rawhide Co., Syracuse, N. Y., through its English agents, Messrs. Geo. Angus & Co., has received during the month of October trial orders for its New Process noiseless pinions from no less than eleven of the electric railway companies of Great Britain. These trial orders will doubtless lead to a considerable trade in the near future. The company reports its trade in the general machinery line as steadily increasing, especially in the case of motor-driven machine tools, where noiselessness is very essential. Since the company's announcement a couple of months ago that it is in position to furnish accurately cut metal gears also, the number of orders received for work in this line has been very gratifying, and point favorably to an extended trade.

Everything Up to Date.—The modern up-to-date smith shop in a large manufacturing plant is something more than a mere collection of forges. As exemplified in recent important installations made by the B. F. Sturtevant Co., Boston, Mass., it includes not only the forges, with the necessary hoods, but a pressure blower, with the required blast piping to all of the forges, and an exhaust fan for the removal of the smoke through another system of piping. This latter feature represents one of the latest improvements, the value of which is demonstrated by the clear atmosphere thus maintained. Complete equipments of this character have recently been introduced by the company for the New York Shipbuilding Co., Camden, N. J.; Chicago & Great Western Railway, Oweiwin, Iowa; H. K. Porter Co., Pittsburg, Pa.; Colorado Southern Railway, Denver, Col.; New York Navy-yard, Brooklyn, N. Y.; Hannibal & St. Joseph Railroad, Hannibal, Mo., and the Wellman-Seaver Engineering Co., Cleveland, Ohio.

TRADE LITERATURE.

Thoroughly Tested.—The extensive use of asbestos in various forms has given it a thorough test, and demonstrates the fact that its fireproof qualities are not exaggerated. The latest pamphlet issued by the H. W. Johns Manufacturing Co. of 128 William street, New York, gives some valuable information relative to this material.

Cleveland Tools.—A catalogue of more than ordinary interest is the latest issued by the Cleveland Pneumatic Tool Co. of Cleveland, Ohio, manufacturer of hammers, drills and other pneumatic appliances. It not only describes these articles, but is extensively illustrated in half-tone, and gives the machinist an excellent idea of the variety of work which they will perform.

Very Artistic.—The leaflet recently issued by the American Tool Works Co. of Cincinnati has its cover designed and printed in gilt—a very appropriate idea, since it secured two gold medals for the general excellence of its machine tools exhibited at the Pan-American.. The leaflet referred to describes its engine and other lathes, drills, shapers and other apparatus so well known to machinists generally.

Complete in Every Detail.—This can be truly said of the catalogue devoted to small tools recently issued by the Pratt & Whitney Company of Hartford, Conn. It is very evident that the book has been compiled by one who is thoroughly conversant with the make-up of such catalogues, for it contains complete information relative to taps and dies, cutters, saws, drills, lathe and other tools for which this company has such a reputation. The typographical work is of the best, and the illustrations finely engraved, showing all the details which machinists wish to study. A copy of the catalogue will be sent on application.

Much in Little.—Although the Sullivan Machinery Co. calls its pamphlet relative to Sullivan air compressors "advance sheets," a large amount of valuable information is contained, in addition to illustrations of the latest designs of compressors. The mining machinery, engines, drills and other apparatus manufactured by the Sullivan Company are too well known to require detailed mention. Some of the points about the Sullivan air compressors are economy, reliability and honesty in every portion of their construction. The company will be pleased to send the catalogue if addressed at Chicago or any of the branch offices.

Telpherage.—Electricians and many manufacturers are now aware that telpherage is a system by which material can be easily and economically transferred from point to point by an overhead system. It has been found of great advantage in removing objects from one part of a factory to another, in warehouse work and in building operations. The telpher runs upon a cable or elevated track, and takes the current from wire. It can transfer weights at almost any speed desired, and at a small cost. The United Telpherage Co. at 20 Broad street, New York, has recently issued circular No. 16, which will be sent to anyone interested.

At Home and Abroad.—Orders from both the foreign and domestic market are keeping Messrs. Charles H. Besly & Co. of Chicago extremely busy. The factory of this concern at Beloit, Wis., is working full time on taps and grinders. A carload of Gardner grinders and Besly band machines was recently shipped to Chicago, and another carload will follow in the near future. Many orders are also being secured for their parallel clamps, Bonanza, Badger and Perfection oil cups, as well as the Helmet oil, such a favorite with engineers. A new catalogue of the grinders, band machines and other specialties will be sent to any address on application.

Acres of Space.—The business of the Norton Emery Wheel Co. of Worcester, Mass., has grown to such proportions that its present plant literally represents acres of space, the floor alone of its factory comprising 136,714 square feet. These figures tell the tale of its remarkable expansion far better than columns of description. Its emery and corundum wheels, grinding machinery, emery bricks and slips and India oilstones have become noted far and wide for their efficiency. Its latest catalogue treats exhaustively of its products, and gives much valuable information, as well as statistics. The catalogue should be in the hands of all requiring grinding machinery.

CONSTRUCTION DEPARTMENT.

THE MANUFACTURERS' RECORD seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with everyone interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

*Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery Wanted."

In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the Manufacturers' Record.

ALABAMA.

Athens—Oil and Gas Wells.—Company has been organized, with capital stock of $10,000, and A. B. Amington of Indiana, president; J. C. Christensen, secretary, and F. R. Daly, treasurer, to bore for oil and gas.

Bay Minette—Oil Wells.—Bay City Oil Co., chartered under New Jersey laws, with capital stock of $100,000, will begin boring at once for oil near Point Clear.

Birmingham—Steel-plate Mill.—It is reported that William Garrett and H. W. Lash of the Garrett-Cromwell Engineering Co. of Cleveland, Ohio, are investigating relative to the construction of a large steel-plate mill to cost probably $500,000.

Birmingham—Transfer, etc., Company.—Harris Transfer & Warehouse Co. has been incorporated, with capital stock of $25,000.

Birmingham—Hoop and Tie Mill.—It is stated that the Tennessee Coal, Iron & Railroad Co. (principal office, Birmingham) will erect a hoop and tie mill at Ensley.

Citronelle—Ice Plant.—J. C. Moulton of Chicago and local parties will erect an ice and electric-light plant.

Florence—Oil and Mineral-land Development.—Woodland Oil & Mineral Co. of Pittsburg, Pa., with capital stock of $300,000, has been incorporated under New Jersey laws by C. A. Jamison, O. W. Fish, A. C. Zeiglar, Dr. E. L. Wasson and others for development of 50,000 acres of oil, gas and mineral lands in Northern Alabama. Prospecting will be commenced at once. Headquarters will be in Pittsburg, with branch office at Florence, Ala.

Fruithurst—Oil Wells.—Fruithurst Mining & Development Co. has been organized to develop oil properties by Chicago (Ill.) parties, who have secured options on several thousand acres of land. E. J. Baynton & Co. of Fruithurst can probably give information.

Fruithurst—Electric Plant, Ice Plant and Land Improvement.—Chas. A. Eastman of Old Orchard, Me., has purchased the Fruithurst Inn of eighty-four rooms and will conduct same as a hotel sanitarium, probably installing electric-light and ice plants; has also purchased 374 city lots and 983 acres of land, together with rights and equities of the East Alabama Vineyard Co., and will develop the property.*

Huntsville—Spoke and Handle Factory.—It is reported that large spoke and handle factory will be established. Address R. E. Pettus, president Chamber of Commerce.

Montgomery—Telephone System.—American Telephone & Telegraph Co. has been incorporated, with capital stock of $250,000, for construction of telephone and telegraph system, by Percy T. Whilden and Guy M. Lovejoy of Bessemer and Jos. J. Dixon of Birmingham.

Piedmont—Oil Wells.—Piedmont Petroleum Oil Co., lately organized, has perfected arrangements for sinking of oil wells. The Delaware Trust Co. of Wilmington, Del., is trustee for company.

ARKANSAS.

Arkansas—Lead and Zinc Mines.—Chartered (under Delaware laws): The Partells Lead & Zinc Co. of Arkansas, with capital stock of $1,500,000.

Gentry.—Gentry Canning & Cold Storage Co., reported several months ago as incorporated, is preparing to erect its proposed ice and cold-storage plant.

Texarkana — Water-works. — Texarkana Water Co. contemplates sinking additional wells for increased supply of water.

FLORIDA.

Brooksville—Ice Plant.—J. J. McDonough, L. B. and G. W. Varn, J. A. Jennings and others have organized a company for establishing an ice plant.

Jacksonville — Contracting. — Chartered: Hammatt Contracting Co., with capital stock of $25,000, by C. S. Hammatt, T. G. Hutchinson and J. B. Allen.

Jacksonville—Fruit Exchange.—Chartered: Florida Fruit & Vegetable Exchange, with capital stock of $10,000, by R. C. White, W. H. Walton, F. H. Christie and others.

Tampa—Cigar Factory.—It is reported that Milton Heineman of Baltimore, Md., is negotiating with a view to establishing a cigar factory at Tampa.

Tampa—Cigar Factory.—Herman Glogowski, Wm. H. Seibert, Paul Colson Perry, Julius Ball and others have incorporated the Tampa-Havana Cigar Co., with capital stock of $25,000, for manufacturing tobaccos, cigars, etc.

GEORGIA.

Abbeville—Brick Works.—Abbeville Brick Works, reported lately as burned, will be rebuilt.

Atlanta—Buggy Company.—John S. Clarke, John R. Singer and C. G. Childs have incorporated the Clarke & Singer Buggy Co., with capital stock of $10,000.

Atlanta — Development Company.— Industrial, Development & Investment Co. has been incorporated, with capital stock of $1000, and privilege of increasing to $100,000, by Geo. E. Bush of Birmingham, Ala.; J. E. Branch and H. S. Kealhofer.

Atlanta—Foundry and Machine Shops.—Hanks Foundry Co., with capital stock of $12,000, has been incorporated to conduct general foundry business, by J. D. Hanks, M. Z. Whitehead, W. W. Smith and others.

Atlanta—Reservoir.—Surveys have been made for new water-works reservoir with capacity of 270,000,000 gallons; city is now considering purchase of site. Address "The Mayor."

Brunswick — Refrigerating Plant.—J. B. Gongeheau will install refrigerating plant in his hotel, and has not awarded contract.

Cedartown—Cotton and Export Company. Charter has been granted to the Cedartown Cotton & Export Co., with capital stock from $100,000 to $800,000. Cedartown and Philadelphia parties are the incorporators.

Chauncey — Saw-mill. — A. Backman will erect a small portable saw-mill.*

Dahlonega—Real Estate.—Robert J. Swain, J. F. Moore, G. D. Bruce and others have incorporated the Lumpkin County Land & Improvement Co., with capital of $2100, for dealing in and improving real estate, etc.

Dahlonega — Electric-power Company. — North Georgia Electric Co. has applied for privilege of increasing its capital stock to a sum not exceeding $5,000,000.

Eastman—Cotton Mill.—Eastman Cotton Mill Co., now building a 5000-spindle and 160-loom plant, will increase its capital from $100,000 to $120,000.

Fort Valley—Ginnery.—W. L. Houser will rebuild his ginnery, lately reported burned.*

Lindale—Cotton Mill.—Massachusetts Mills in Georgia has ordered fifty additional looms, increasing its total to 1800; has 50,000 spindles.

Macon—Abattoir, Refrigerating Plants, etc. The British, Southern States (U. S. A.) Cattle Abattoir & Produce Co., Limited, has been incorporated under the laws of England, with a capital stock of $5,000,000, its purposes being to establish abattoir, refrigerating plants, canneries, sugar-houses and other industries throughout Georgia. It is claimed that options have been secured on 125,000 acres of land for the facilitation of the company's plans. Among those interested are Col. Henry J. Lamar of Macon; Frank Reihill (financial secretary to Sir Thomas Lipton), 196 City Road, London, E. C., England; Duncan McDairmid (general manager of Lipton, Limited), 196 City Road, London, England; William Petersen (chairman of Wm. Petersen, Limited, ship-owners), Kenton Lodge, Newcastle-on-Tyne, England, and W. M. Killop (member of Parliament), Glasgow, Scotland. It is reported work on a $1,000,000 abattoir will commence in February next.

Rome—Ice Plant.—Rome Ice Manufacturing Co. will erect an ice storage-house of 3000 tons capacity.

Valdosta—Ice Plant.—C. F. Clarke is president; J. G. Cranford, vice-president, and G. C. Crom, secretary and treasurer, of the Georgia Ice & Manufacturing Co., recently reported incorporated.

Zebina—Cotton Gin.—Taylor, King & Co. will rebuild their cotton gin reported burned, but not until next season.*

KENTUCKY.

Ashland—Roofing Plant.—Thompson Manufacturing Co. is the name of the Cleveland (Ohio) parties who were reported lately as investigating with a view to establishing corrugated metal roofing plant at Ashland.

Ashland — Sheet-bar Mill, etc. — Ashland Sheet Mill Co. has contracted for and has now under construction its proposed continuous billet heating furnace, with gas producers, capacity to be 130 tons of 4x8-inch billets every twenty-four hours.

Beattyville—Coal Mines.—Sturgeon Land & Coal Co. has been incorporated, with capital stock of $10,000, by Geo. W. Gourley, John W. Redman and William Worthington.

Beech Grove—Oil and Gas Wells.—Company has been formed by R. R. Bemus for development of oil and gas lands; company has 9000 acres.

Bowling Green—Ice and Cold-storage Company.—Bowling Green Ice & Cold Storage Co. has increased its capital stock from $25,000 to $50,000.

Catlettsburg — Stove Works. — Gate City Stove Works has been chartered, with capital stock of $2000, by J. P. McCloskey, C. F. Wilson and others.

Danville—Oil Wells.—Royal Oil Co. has been incorporated by James Deston and G. W. Welsh, with capital stock of $25,000.

Hawesville — Water-works. — Henderson Williams is the chief promoter in construction of system of water-works for the city.

Lexington—Stemmery.—G. M. Asher and F. P. Drake will erect a large building to be used as a stemmery by the Continental Tobacco Co.

Lexington—Electric Plant.—Bluegrass Consolidated Traction Co., just incorporated with capital stock of $7,000,000, includes in its plans the erection of an electric-power plant and lighting plant to cost $1,000,000. M. C. Alford of the incorporators can be addressed. (See item in "Railroad Construction" department.)

Louisville—Distillery.—Chartered: R. Monarch & Co. (distillers), with capital stock of $100,000, by R., D. D. and M. V. Monarch.

Louisville—Lumber Company.—Louisville Point Lumber Co., with capital stock of $7000, has been incorporated by Edward S. Shippen, H. Van S. Brown, Hughes Moore and others.

Paducah—Water-works.—City will probably improve its water-works system; J. M. Lang, mayor.

Paducah—Iron Furnace.—It is reported the Paducah iron furnace will soon be blown in and operated by S. Frank Eagles of Milwaukee, Wis.

Smithland—Zinc Mines.—D. C. Roberts and associates have leased about 2000 acres of lands near Smithland, and are prospecting for zinc, as recently reported.*

Somerset—Oil and Gas Wells.—Fishing Creek Oil & Gas Co. has been organized, with James Denton, president; J. W. Gover, vice-president, and Harry Walt, secretary and treasurer, for operating in western Pulaski county; capital stock is $100,000.

Williamsburg—Coal Mines.—Mount Morgan Coal Co. has increased its capital stock from $35,000 to $42,500.

Williamstown — Turnpike. — Chartered: Webb & Odor Turnpike Co., with capital of $1400, by J. F. Webb and others.

Winchester—Oil and Mineral Lands.—Belleville Oil & Mineral Co., with capital stock of $5000, has been incorporated by H. P. Thompson and A. F. Dickworth.

LOUISIANA.

Crowley—Oil Wells.—John A. Kutsch is organizing a stock company to drill for oil in Arcadia parish.

Gueydan—Canal.—The "Gueydan Drainage District" will issue $50,000 of bonds for construction of drainage canal.

Hammond—Oil Wells and Pipe Line.—Hammond Petroleum & Pipe Line Co. has been organized, with capital stock of $500,000, for development of oil properties which the company owns. C. E. Cate, W. W. Bankston, G. E. Dunn, J. E. Wilcombe and Dr. S. L. Powlett are the directors.

Houma — Water-works. — City has voted issuance of $30,000 of bonds for its proposed water-works system. Address "The Mayor."

Jennings—Oil Wells.—Eagle Petroleum Co. has been organized to operate in the Jennings field. Wm. H. Byrnes of New Orleans is president; F. R. Jaenke of Jennings, vice-president; H. Dudley Coleman of New Orleans, secretary and treasurer.

Jennings—Oil Wells.—Sulphur Springs Oil Co. has been incorporated, with capital stock of $500,000, by J. P. Haber, president; D. W. C. Mellow, vice-president; S. P. Johnson, treasurer, and W. H. Curtis, secretary.

Lake Charles—Oil Wells.—J. B. Watkins has contracted for sinking an oil well.

New Iberia—Irrigating Canal.—Henry Mestayer contemplates building irrigating canal, about 50,000 cubic yards of dirt to be moved.*

Plaquemine—Barrel and Stave Factory.—Plaquemine Stave and Barrel Factory, burned at a loss of $12,000, will be rebuilt.

Vinton — Canal. — Sam Robinson of the Houston Canal Co. has made a proposition to construct proposed canal at Vinton; $20,000 has been subscribed, and canal will have capacity for watering 30,000 acres of rice lands.

MARYLAND.

Baltimore—Real Estate.—Jos. R. Wood, Albert Morganwick and others have incorporated the Marvista Company, with capital stock of $10,000, for dealing in real estate.

Baltimore—Tin-can Factory.—It is reported that R. P. Shurger is interested in the formation of a new company for the manufacture of tin cans, and that site has been secured for new plant.

Baltimore — Drug Company. — Chartered: Cutinal Drug Co., with capital stock of $10,000, by Chas. F. Bender, Chas. W. A. New, John P. New and others.

Baltimore—Woolen Mill.—Maryland Woolen Co. has been incorporated, with capital stock of $250,000, to operate the woolen mill previously reported as contracted for; plant is now about completed. Nicholas W. Steele is manager.

Baltimore — Paint Company. — Litharge Paint Co. has been incorporated, with capital stock of $25,000, for dealing in paint, by Edward W. Phillips, Chas. N. Boulder, Julius H. Wyman and others.

Barton—Coal Mines.—J. W. Galloway and E. B. Clayton have secured control of the plant of the Frostburg Coal Co. at Barton, and will operate same on an average output of 300 tons per day.

Bloomington—Timber-land Development.—Bond Bros. of Philadelphia, Pa., who recently purchased 13,000 acres of timber lands near Bloomington, are arranging to erect mills for development, and will construct a standard-gauge road.

MISSISSIPPI.

Estabutchie—Lumber Mill.—A. W. Stevens has contracted for installation of saw-mill with capacity of 85,000 feet per day to replace mill previously burned.

Jackson—Machine Shops, etc.—Illinois Central Railroad Co., J. T. Harahan, second vice-president, Chicago, Ill., states that there is no truth in the report of its erecting machine shops, roundhouse, etc., at Jackson at the present time.

Laurel—Water-works.—City will make an additional issue of $7500 of bonds, making $37,500 in all for water-works purposes. Address "The Mayor."

Lexington—Water-works—W. M. Money of Carrollton, Miss., has made a proposition to construct system of water-works at Lexington.

Vicksburg—Ice Plant.—Vicksburg Ice Co. has awarded contract for installation of a 60-ton plant to increase its capacity.

Vicksburg—Cotton Mill.—Joseph Hamburg is interested in the proposed erection of a cotton mill.

MISSOURI.

Bismarck — Hotel Company. — Chartered: Bismarck Hotel Association, with capital stock of $15,000, by Louis Miller and others.

Butler — Clothing Company. — Chartered: American Clothing House, with capital stock of $10,000, by Geo. E. Logan, B. F. Moore and H. G. Cook.

Carrollton—Wagon Company.—Brocksmith Wagon Co. has been chartered, with capital stock of $15,000, by J. T. Mitchell, W. H. Marshall, R. P. Queen and others.

Caruthersville — Water-works. — City has voted issuance of $26,000 of bonds for construction of water-works. Address "The Mayor."

Farmington—Telephone Company.—Farmington Telephone Co. has increased its capital stock from $5000 to $10,000.

Hannibal — Wagon Company.—Chartered: Beggs-Goodson Wagon Co., with capital stock of $30,000, by J. W. Beggs, T. B. Goodson and R. B. Goodson.

Kansas City—Bridges.—E. F. Swinney and Stuart R. Knott, receivers for Union Terminal and Suburban Belt railroads, have authorized an expenditure of $200,000 for construction of five steel bridges, largest of which will span the Kaw river and cost $100,000.

Kansas City—Supply Company.—Pankratz Supply Co., with capital stock of $10,000, has been incorporated by John Pankratz and others

Kansas City—Book Company.—Chartered: Kansas City Subscription Book Co., with capital stock of $5000, by C. R. Hunt and others.

Kansas City—Land Company.—Missouri Land Co. has been incorporated, with capital stock of $10,000, by Geo. S. Graham, G. F. Winter, John H. Lucas and others.

Monett—Cold-storage Plant.—Monett Electric Light & Ice Co. will enlarge by installation of a 10-ton refrigerating machine; contract awarded.

Nevada—Ice Plant.—The company reported recently as having been organized for erection of a 15-ton ice plant will be known as the Nevada Crystal Ice & Cold Storage Co.

Nevada—Water-works Improvement.—J. B. Quigley has purchased the Nevada water-works plant, as recently reported, and will expend about $60,000 in betterments.*

Pleasant Hill—Manufacturing.—Chartered: Royal Manufacturing Co., with capital stock of $3000, by F. W. Little, F. J. Fetter and Alice V. Little.

Rockport—Creamery.—Rockport Butter & Cheese Co. has been incorporated, with capital stock of $5150, by H. Hartman, F. H. Oswald, Martin Hartman and others.

Springfield—Water-works Improvement.—Springfield Water-Works Co. will erect new 100-foot standpipe with capacity of 720,000 gallons.

St. Charles—Electric-light and Power Company.—St. Charles Electric Light & Power Co. has been incoroporated, with capital stock of $30,000, by J. D. Houseman, F. E. Niesen and W. J. Murray.

St. Charles — Transportation.—Chartered: St. Charles Ferry & Transportation Co., with capital stock of $15,000, by J. D. Houseman, J. J. Broderick and J. B. C. Lucas.

St. Charles—Water-works.—City has purchased for $21,000 the water-works plant of the St. Charles Water & Improvement Co. Address "The Mayor."

St. Joseph—Tailoring.—Chartered: Wehrman Tailoring Co., with capital stock of $15,000, by A. W. Wehrman and others.

St. Louis.—Chartered: Compressed Stop Air Co. of Missouri, with capital stock of $120,000, by H. V. P. Cooke, C. A. Bartliff, W. W. Corey and others.

St. Louis—Cooperage.—Chartered: Groepper Cooperage Co., with capital stock of $5000, by Hermann Groepper, Bernard Groepper and Geo. B. Dierkes.

St. Louis — Brokerage.— Chartered: Noel-Brown Brokerage Co., with capital stock of $100,000, by H. G. Noel, J. D. Cameron and M. T. Brown.

St. Louis—Mercantile.—Chartered: Century Dry Goods Co., with capital stock of $50,000, by W. E. Simpson and others.

St. Louis. — Chartered: Quigley-Keogh Tracklaying Co., with capital stock of $5000, by Robert M. Quigley, Edward Keogh, Barret A. Aldrich and others.

St. Louis — Planing Mill. — Northwestern Planing Mill Co. has been incorporated, with capital stock of $5000, by P. Flowers, J. Frohly and F. L. Lamkey.

St. Louis.—Chartered: Consumers' Penny Pouch Express Co., with capital stock of $200,000, by E. F. Read, Jos. Fybusch, A. Hupp and others.

St. Louis—Mercantile.—Chartered: J. B. Bartlett Grain Co., with capital stock of $25,000, by John B. Bartlett and others.

St. Louis — Manufacturing. — Chartered: Compton-Harman Manufacturing Co., with capital stock of $10,000, by P. C. Compton, E. V. Harman and H. M. Pollard.

St. Louis—Water-works Improvement.—Engineers Allen Hazen of New York and Geo. Y. Wisner of Detroit have about completed their examination of the water supply at St. Louis, and will recommend some device or method for filtration and purification.

NORTH CAROLINA.

Asheville — Electrical Company. — Chartered: Sumner & Sons, to make and sell electricity in various forms, by Frank A. Sumner, Theo. Sumner of Asheville and A. K. Smith of Reidsville; capital stock is $50,000.

Charlotte—Pipe and Foundry Company.—Chartered: Charlotte Pipe & Foundry Co., with capital stock of $10,000, by W. F. Dowd and others.

Goldsboro — Electric Plant, Water-works and Street Improvements.—City has voted issuance of bonds in $50,000 for water-works, $25,000 for electric plant and $20,000 for street improvements, recently reported as proposed. Address "The Mayor."

Greensboro—Electric Plant and Water-works.—City will at an early date enlarge its present water-works system and install an electric-light plant, as recently reported; W. H. Osborn, mayor.

Henderson—Ice and Cold-storage Plant.—Henderson Ice & Cold Storage Co. has been incorporated, with capital stock of $20,400, by E. R. Conger, J. A. Woodard, W. O. Elliott, W. D. Pruden and others.

Henrietta.—Chartered: Amos Owen Cherry Tree Co., with capital stock of $10,000, by T. Bright, Chas. Watkins and Sallie Bright.

High Point—Table Company.—Piedmont Table Co. has increased its capital stock.

Morganton—Gold Dredge.—J. E. Warren is installing a steam gold dredge for washing gold deposits in the bed of the Catawba river, and may later on construct another for the same purpose.

Person County—Copper Mines.—Danville & Virginia Copper Mining Co. has been organized, with capital stock of $500,000, for development of 150 acres of copper lands in Person county. Jas. G. Penn is president; Jas. A. Henderson, vice-president; F. H. Henderson, treasurer, and George L. Noell, secretary, all of Danville, Va.

Raleigh—Hardware Company.—C. B. Hart, F. T. Ward and Lula H. Ward have incorporated the Hart-Ward Hardware Co., with capital stock of $40,000, to succeed the Julius Lewis Hardware Co.

Salisbury—Street Improvements.—City will vote on issuance of $100,000 of street improvement bonds. Address "The Mayor."

Thomasville — Furniture Company.—Lambeth Furniture Co. has been incorporated, with capital stock of $25,000, by R. T. Lambeth, R. L. Lambeth, F. S. Lambeth and J. L. Armfield.

Wadesboro — Water-power-Electrical Development.—Bluitt Falls Electrical Power Co. (reported lately as incorporated for transmitting power by development of Bluitt Falls) has completed organization with Fred. J. Coxe, president and treasurer; Robert L. Steele of Rockingham, secretary, and Samuel T. Stowe of Mecklenburg county, general superintendent. About 6000 horse-power can be developed in dry season. Address Fred. J. Coxe.

West End—Veneering Mill.—West End Veneering Co. has plant for manufacture of veneering for furniture, crates, etc., about completed, and will incorporate, with capital stock of $5000, and privilege of increasing to $10,000; D. A. McDonald, Carthage, N. C., president; M. C. McDonald, treasurer, and A. P. Hassell, secretary.

Wilmington—Floral Company.—John A. Everett, Jr., will erect two hothouses, 20x150 feet each, which he will operate under the name of the Wilmington Floral Co.; 8000 square feet of glass will be required to enclose the houses.

SOUTH CAROLINA.

Carlisle—Telephone Company.—Chartered: Carlisle Telephone Co., with capital of $600, by W. H. Gist, W. E. Ratchford, L. D. Childs and L. B. Jeter.

Charleston—Drug Company.—Walter Pringle and others have incorporated the Charleston Drug Manufacturing Co., with capital stock of $60,000, and privilege of increasing to $100,000, for conducting drug-manufacturing business.

Columbia—Sewerage and Water-works.—J. L. Ludlow, Winston, N. C., is making surveys for the proposed new sewerage system for Columbia; city will also vote on issuance of bonds for enlarging water systems. Address "The Mayor."

Greenwood — Lumber Company. — Chartered: W. J. Snead Lumber Co. has been incorporated, with capital stock of $15,000, by W. J. Snead, W. J. Wells and W. L. Durst.

Newberry — Sewerage.—Commissioners of public works have elected C. C. Beddoes of Newberry engineer to prepare plans and maps for city's proposed sewerage system.

Walhalla — Water-works. — Blue Ridge Water Co. has been incorporated, with J. W. Shelor, president, and will soon begin work on construction of its proposed $20,000 system.

TENNESSEE.

Chattanooga—Mercantile.—Chartered: McKee-Blackman & Seay Co., with capital stock of $9000, by E. J. Dillard and others.

Chattanooga — Mining.—Chartered: Pyott Land & Mining Co., by Jake Smith, Joel I. Pyott, S. A. Pyott and others.

Chattanooga—Coal Mines.—Northern capitalists have purchased from Dietzen Bros. and R. H. Williams 5000 acres of land on Walden's Ridge, and will prospect for coal.

Chattanooga — Window-glass Factory. — Chas. Reif, Joseph Bonshire, Chas. Neidhart, W. T. Murray and others will incorporate company for establishment of plant to manufacture window and plate glass with daily capacity of several tons. The promoters are also members of the company previously formed to operate glass-bottle factory.

Del Rio—Timber Lands.—Col. T. T. Adams has purchased and will develop 95,000 acres of timber lands near Del Rio.

Dickson—Flour Mill.—G. W. Dodson of Lyle, Tenn., has purchased and will operate the Superior Milling Co.'s flour mill at Dickson.

Jackson — Engine and Boiler Works. — Southern Engine and Boiler Works will install considerable additional machinery.

Kingston—Lumber Company.—Vestal Lumber Co. has been incorporated, with capital stock of $25,000, by G. E. French, C. Vestal, A. B. Gleaves and others.

Knoxville—Spoke Factory.—H. E. Looney of Castine, Maine, is investigating with a view to securing site for establishment of a large wagon and carriage-spoke plant in Knoxville.

Knoxville—Packing Plant.—East Tennessee Packing Co. will erect an addition and install additional machinery for increasing its capacity; new machinery includes steam apparatus, etc.

Knoxville—Storage Tanks, etc.—Atlanta (Ga.) Oil Co. is investigating with a view to establishing storage tanks, warehouse and offices at Knoxville.

Knoxvile—Ice Plant.—Crystal Ice Co. will enlarge by installation of a 25-ton plant.

Knoxville—Foundry.—A. B. Day, Hugh T. Sanford, Edward T. Sanford, E. J. Sanford and C. E. Lucky have incorporated the Sanford-Day Iron Works, with capital stock of $50,000, for erection and equipment of a foundry plant.

Knoxville—Electric-power Plant.—The improvements being made at a cost of $100,000 by the Knoxville Electric Light & Power Co. will soon be completed, and include practically a duplicate plant, consisting of a new brick building 60x100 feet, two cross-compound condensing engines 18x36x42 and 700 horse-power each, which will drive two generators of 450 kilowatt capacity; power will be generated in three 300-horse-power tubular boilers. Col. C. C. Howell is general manager.

Memphis—Cotton Mill.—F. L. Martin, 794 Union street, contemplates establishing a cotton-bats mill.*

Murfreesboro—Ice Plant.—Ben W. Hicks will install 10-ton ice plant.

Nashville—Telephone Exchange.—Memphis parties interested in the Memphis Telephone Co., Harvey Meyers, president, are investigating with a view to organizing an independent telephone company for constructing an exchange in Nashville to connect with Memphis system. If franchises are granted new company subways for wires will be constructed. Champion, Brown & Akers at Nashville are attorneys for company.

Newbern—Ice Plant.—Cole Bros. have awarded contract for installation of a six-ton ice plant.

Sevierville — Water-power Development. Mineral and Timber Land Development, etc. Knoxville, Sevierville & Kimberlin Heights Electric Railway Co., promoted by Ashley S. Johnson of Kimberlin Heights, Tenn., and W. T. Goffe of Toronto, Canada, for purposes including development of iron, mineral and timber properties, will generate electricity by water-power, damming the headwaters of the Pigeon river eight and ten miles above Sevierville; dams will be of solid masonry, 200 feet long, 30 feet high and 25 feet thick. W. T. Goffe is at present at the Hotel Imperial, Knoxville.

Union City—Mercantile.—Chartered: The Cladwell-Meyers Co., with capital stock of $3000, by Henry Meyers and others.

Waynesboro—Oil Wells.—Geo. R. Johnson of Waynesboro and J. L. Bell of New York have leased 80,000 acres of oil lands in Wayne county, and will develop same.

Winchester—Oil Wells.—J. H. Henley of Mobile, Ala., and associates will sink oil wells at Winchester.

TEXAS.

Alvin—Laundry.—Muldroy & Archambeau are erecting building which will be equipped as a laundry.

Beaumont—Lumber Company.— Industrial Lumber Co. has increased capital stock from $200,000 to $300,000.

Beaumont—Oil Wells.—Chartered: Granite Mountain Oil Co., with capital stock of $100,000, by J. B. Wadsworth, B. Milaneno and D. C. Aldridge.

Beaumont—Oil Wells.—Apex Oil Co., with capital stock of $1,000,000, has been incorporated by W. S. Wood, A. F. Nathan, J. C. Whiting, George M. Canterberry of Kansas City, Mo.; R. C. Davant of Beaumont and others.

Beaumont—Oil Wells.—Hill Oil Co., with capital stock of $1,000,000, has been incorporated by A. A. Hibbs and Herman Becker of Philadelphia, Pa.; Jonathan Lane of Houston, A. M. Hall of Tyler, Texas, and others.

Beaumont — Oil-pipe Line, etc.— International Development Co., with capital stock of $2,500,000, H. D. Mepham, general manager, will construct a pipe line from Beaumont to Bolivar Point, construct storage tanks and reservoirs for 10,000,000 to 20,000,000 barrels of oil and create necessary terminals and wharves at Bolivar. Company has chosen Galveston as its port at which to conduct business.

Beaumont — Lumber Mill. — Bartholomew Lumber Co. has been incorporated, with capital stock of $50,000, for establishment of a hardwood band-saw mill of 50,000 feet daily capacity, by D. W. and W. H. Bartholomew and E. R. Wicks.

Cameron—Ice Plant.—Cameron Ice & Cold Storage Co. has been organized, as recently reported, and will erect a 20-ton ice and 65-ton refrigeration plant.

Cuero—Rice Lands.—O. L. Crouch and Gus Schleicher have purchased and will plant in rice 400 acres of land.

Denison—Mining.—H. T. V. Perry, A. E. Perry of Colgate, I. T.; L. B. Eppstein of Denison and others have incorporated the Perry Bros. Mining Co., with capital stock of $100,000.

Denison—Water-works.—It is reported that the Denison Water Co. will sink new wells for increased water supply.

Denison—Laundry.—Chartered: Star Steam Laundry Co., with capital stock of $5000, by Walter D. Collins, F. B. Carver, Jesse Whitehurst and others.

El Paso—Water-works.—Arthur H. Aquier has been granted franchise for construction of system of water-works.

Fort Worth—Publishing.—Chartered: Register Publishing Co., with capital stock of $30,000, by C. W. Hanson, C. E. Hill, Mrs. E. E. Goodell and others

Fort Worth — Telephone System. — Fort Worth Telephone Co., composed of John C. Harrison, John Bardon, Martin Casey of Fort Worth and Scott Johnson of Chicago, has applied for franchise for construction of a $200,000 telephone system.

Galveston—Refinery.—It is reported that the Standard Oil Co. (principal office, New York) is considering plans for establishment of a large oil refinery at Galveston.

Galveston—Fisheries and Plant.—Henry Wolcott of Denver, Col., and associates have purchased the Galveston Red Snapper Co.'s plant, and incorporated the Gulf Fisheries Co., with capital stock of $700,000, to continue the fisheries, enlarge the ice-making and fish-freezing plants, put additional vessels into commission, etc. Mr. Wolcott, W. T. Barton of San Francisco, James M. Munn of Galveston, H. M. Gillig of Larchmont Manor, N. Y., and others are incorporators.

Graham—Oil and Gas Wells.—Wichita Oil & Coal Co. is developing oil and gas wells.

Graham—Oil and Gas Wells.—Judge R. F. Arnold is prospecting for oil, as recently reported, and has also discovered gas, which will be developed.

Houston—Electric-light and Power Plant.—Citizens' Electric Light & Power Co. will, it

is reported, expend $60,000 in improving and re-equipping its plant.

Lockhart — Ice Plant. — Lockhart Water-Works Co. has awarded contract for erection of a 10-ton ice plant.

Merkel—Ginnery.—Merkel Ginning & Compress Co. has been incorporated, with capital stock of $30,000, by J. A. Harris, John Guitar, Sam Hunt, R. D. Anderson and others.

Orange—Canals.—L. F. Daniels, engineer, of Baumont, Texas, has contracted for construction of seven miles of new irrigating canals.

Palestine — Cannery. — L. Lowenthal has made a proposition to establish a cannery.

Sealy—Mattress Factory.—D. and R. H. Haynes will, with others, organize a stock company for enlarging and improving their mattress factory, now operated as the Sealy Cotton Mattress Factory.

Stephenville—Ice Plant.—Stephenville Ice Co. will erect a 10-ton plant, contract for which has been awarded.

Taylor — Telephone System. —Williamson County Telephone Co. has been incorporated, with capital stock of $100,000, for constructing telephone system throughout Williamson county, by James S. Brailey, J. E. Boynton and J. B. Earl.

Terrell—Cotton-oil Mill.—Terrell Cotton Oil Co. has increased capital stock from $50,000 to $100,000.

Texarkana.—Chartered: St. Rosa Delima, to conduct institution of learning, orphans' home and hospital, by Eleanor Kearney, Mary Kearney and Bessie Casey; capital stock $12,000.

Velasco—Irrigating Canals.—Brazoria Land & Cattle Co. will construct two large canals with capacity for irrigating about 105,000 acres. H. A. Lloyd of St. Louis, Mo., has the management of the property.

Waco—Ice Factory.—Geyser Ice Co. will install three 50-ton machines for enlarging its ice factory.

VIRGINIA.

Basic City — Furniture Factory. — Basic City Furniture Factory is installing new machinery and power for doubling its capacity.

Basic City—Gas Wells.—J. W. Elluson, R. W. Crowder, E. E. Reuter, J. E. White and others are forming a syndicate to bore for natural gas. Address R. W. Crowder at Waynesboro, Va.*

Buena Vista—Iron Mines.—W. E. Waugh has leased and will develop iron-ore property.

Crozet—Barrel and Box Factory.—Crozet Cooperage Co. has been established and is manufacturing barrels, boxes, crates, etc.; J. A. Bell, manager.

Harrisonburg — Ice Plant. — Harrisonburg Creamery Co. will erect an ice plant.

Low Moor—Iron Furnaces.—Rich Patch Iron & Ore Co., J. T. Lightner, general manager, is reported as arranging for construction of iron furnaces at its mines.

Lynchburg — Drug Company. — Budwell Pharmacal Co. has been incorporated, with capital stock of not less than $50,000, nor more than $100,000, for manufacture of drugs, chemicals, etc. J. A. Anderson is president, secretary and treasurer, and C. H. Goldsborough, vice-president.

Lynchburg—Cold-storage Plant and Warehouse.—Armour & Co. will erect cold-storage plant and warehouse at Lynchburg. Building will contain ice plant with two 200-horse-power boilers and a 50-ton ice-making machine fully equipped for supplying the cold-storage. There will also be three smoke-houses, two stories high, each 9x10 feet. Address E. L. Kundsen of Chicago, superintendent of branch houses for the Armours.

Newport News—Shipbuilding Plant.—Newport News Shipbuilding & Dry-Dock Co., reported during the week to expend large sum in improvements, states that no immediate improvements of any magnitude will be carried out in the near future, but some improvements will be continually going on from time to time; W. A. Post, general superintendent.

Radford—Ice Plant.—Radford Ice Co. will install a 10-ton plant.

Roanoke — Cold-storage Plant. — Virginia Brewing Co. is erecting building 25x200 feet, to be equipped for storage of fruit and produce; capacity 6000 barrels and an equal number of cases of eggs.

WEST VIRGINIA.

Bluefield—Electric-light Plant.—East River Electric Co. is installing new machinery, including 300-horse-power engine and a 2000-light machine.

Charleston—Oil Wells.—Calhoun County Oil & Gas Co. has been incorporated, with capital stock of $20,000, by J. H. Gaines, S. E. Kenney and others for development of oil wells in Calhoun county.

Clarksburg—Real Estate.—Chartered: West End Land Co., with capital stock of $50,000, by Chas. M. Hart, Alex. Duff, Richard T. Lowndes, Jr., and others.

Fairmont—Coal Mines.—M. B. Cochran and Harry T. Crossland of New Haven, W. H. Cockran of Dawson, J. A. Barnhart, E. A. Humphries and J. R. Smith of Scottdale and others have purchased 700 acres of coal lands near Fairmont, and will organize a stock company for developing the property.

Fairmont—Land Improvement.—Fairmont Coal Co. is laying off a new town to be called West Middleton, and has awarded contract for erection of forty double dwellings, which will have all modern conveniences and cost $50,000.

Huntington — Shoe Factory. — Jeff. Newberry, Geo. B. Clay, W. H. Crum and others have incorporated the Newberry-Clay Shoe Co. for manufacturing shoes; capital stock is $100,000.

Huntington—Silk Mill.—It is reported that David N. Sease of Western Pennsylvania, representing a silk-mill company with $150,000 capital, is securing data relative to the establishment of a silk mill at Huntington.

Huntington—Cold-storage Plant.—Huntington Cold Storage Co. has been incorporated, with capital stock of $100,000, by C. W. Campbell, C. M. Davidson of Newport, Ky., and E. G. Curtis.

Parkersburg — Glass Factory. — It is reported that the Beaumont Glass Co. of Martin's Ferry, Ohio, will remove its plant to Parkersburg, provided certain inducements are offered.

Piedmont—Warehouse.—J. C. Orrick & Son Co. have purchased site at $2500, and will erect a warehouse.

Wheeling — Abattoir and Cold-storage Plant.—South Side Provision Co. is erecting an abattoir and cold-storage plant, to be equipped with refrigerating machine, contract for which has been awarded.

Wheeling—Machine-tool Works.—Subscriptions are being taken for Conradson Turret Lathe Co., to be organized with capital stock of $250,000 for establishing the plant for manufacturing turret lathes reported recently as contemplated by C. M. Conradson. Address Mr. Conradson, care "Board of Trade."

Wheeling—Roof and Cornice Works.—Wheeling Roof & Cornice Co. will increase its capital stock, and contemplates enlarging its works by erection of two additional buildings, etc.

Wheeling—Oil Wells.—Loyal Oil Co. has been incorporated by W. L. Russell, Frank C. Cox, R. K. Giffen, Jr., C. E. Morris and others; capital stock $1,000,000.

Wheeling—Brewery and Ice Plant.—Uneda Brewing Co., previously reported incorporated for erection of 40,000-barrel-per-year brewery and a 100-ton ice plant, has had plans made by Mueller & Milden of Detroit, Mich., and will award contract at once.

Wilsonburg—Coal-mining Plant.—Howard Coal & Coke Co., recently purchased by Clarksburg and Fairmont parties, has reorganized, with John A. Clark of Clarksburg, president, and A. C. Adams of Baltimore, Md., secretary and treasurer, and will build four new coal-mining plants at Wilsonburg, where company owns 1000 acres of coal and 200 acres of surface lands.

OKLAHOMA TERRITORY.

Anardarko — Brick Works. — Chartered: Chas. Tipple Brick Co., with capital stock of $10,000, for manufacturing brick, by Chas. Tipple and L. C. Gardner.

Guthrie—Publishing.—Chartered: Observer Publishing Co., with capital stock of $10,000, by E. E. Brown, Mrs. Laura Brown of Guthrie and J. C. Caldwell of Weatherford.

Guthrie—Mining and Milling.—Russell Development, Mining & Milling Co. has been incorporated, with capital stock of $200,000, by C. W. F. Hocker of Danville, Ill.; J. C. Strang, C. H. Woods of Guthrie and others.

Hennessey — Water-works. — Council contemplates constructing city works. Address "The Mayor."

Lareine—Land and Cattle Company.—Chartered: Ross Land & Cattle Co., with capital stock of $20,000, by H. Ross, Ora G. Ross and Anna P. Paren.

Lawton—Water-works.—Lawton Water Co. has been incorporated, with capital stock of $10,000, by M. J. Pierce of El Reno, Mathew Duff of Enid, C. W. Strother of Lawton and others.

Lawton—Ice Plant.—William Ahern will erect an ice plant.

Mangum — Ice Plant. — Mangum Electric Light & Ice Co. is erecting a 50-ton ice plant.

Norman—Ice and Cold-storage Plant.—Star Ice & Cold Storage Co. has been incorporated, with capital stock of $30,000, by O. S. Martin, E. E. Hayes, R. F. Askren and others.

Oklahoma City—Brewery.—Moss Brewery will be enlarged.

Oklahoma City—Brick and Tile Works.—United States Pressed Brick & Tile Co., with capital stock of $125,000, has been incorporated, with Ira N. Phillips, president; N. S. Sherman, Sr., vice-president, and W. F. Young, secretary and treasurer. Site purchased at $10,500.

Ponca City—Ice Plant.—Ponca City Ice Co. has been incorporated, with capital stock of $25,000, by G. G. Pabst, A. Ruemmeli, H. Braun and others for erection of a 25-ton ice plant.

BURNED.

Augusta, Texas.—T. C. Lively's cotton gin.

Dallas, Texas.—Tophoven's Tannery and Whip Factory on South Austin street; estimated loss $10,000.

Dunlap, Tenn.—L. W. Cordell's saw and planing mill; estimated loss $2000.

Easton, Md.—Easton Turning & Enameling Works; estimated loss $25,000.

English, Ark.—L. W. Clement's cotton gin; loss $9000.

Eolian, Texas.—H. P. Sansberry's cotton gin; loss $1500.

Fales, Ga.—B. H. Tanner's grist mill, ginnery and saw-mill; estimated loss $6000.

Francis, I. T.—J. F. Peck & Bros.' cotton gin.

Grapeland, Texas.—Shaver Bros.' cotton gin.

Louisville, Ky.—J. V. Reed & Co.'s printing house, 526 West Main street; estimated loss $40,000.

Pillowville, Tenn.—Fount Scates' grist mill.

Terrell, Texas.—Terrell Shirt Factory, operated by John R. Woodall; loss about $3000.

Thurmond, W. Va.—W. P. Rend Coal Co.'s electric-power plant; estimated loss $10,000.

Unionville, Va.—Hughes & Childress' saw-mill.

BUILDING NOTES

Anniston, Ala.—Mercantile Building.—Jos. J. Willett will erect a one-story building 25x100 feet. C. W. Carlton & Co., architects, will shortly award contract for its erection.

Anniston, Ala.—Office Building.—C. W. Carlton has prepared plans for a four-story office building.

Asheville, N. C.—Courthouse.—Marcus L. Reed, chairman courthouse commission, will open bids November 20 for furnishing all material and labor in erection of courthouse, for which $50,000 of bonds was recently issued. Plans and specifications are on file at above office and at office of Kenneth McDonald and J. F. Sheblessy, northeast corner Fourth and Main streets, Louisville, Ky. Bids will be received in two ways—first, for building as specified, and second, for building as specified, except that all the cut stone above level of water table (belt course at level of first floor) will be changed to terra-cotta. Certified check for $500 must accompany each bid. Bond required and usual rights reserved.

Atlanta, Ga.—Church.—Westminster Presbyterian congregation, Rev. Chas. R. Nisbet, pastor, will soon begin erection of its proposed $25,000 edifice after plans by W. F. Denny.

Atlanta, Ga. — Infirmary. — A two-story brick annex 16x16 feet, and to cost $25,000, will be erected to St. Joseph's Infirmary at once.

Augusta, Ga.—Church.—First Baptist congregation is having plans made for a pressed-brick structure, with stone trimmings, to cost $40,000. Address "The Pastor."

Baltimore, Md.—Warehouse.—E. J. Walker Warehouse Co. has been incorporated, with capital stock of $10,000, by J. Clarence Bowerman, Edwin J. Walker and others.

Baltimore, Md.—Gymnasium Building.—Theodore G. Ahrens is preparing plans for a gymnasium building for the Bohemian Sokal to be 57x107 feet and cost $20,000.

Baltimore, Md.—Warehouse.—James E. Lafferty has completed plans for the erection of a brick and stone warehouse 30x100 feet, to cost $10,000, for the Resinol Chemical Co.

Baltimore, Md.—Warehouse.—Madison L. Day's Sons Co. had plans made for a three-story brick warehouse 100x20 feet, equipped with elevator and to cost $10,000. Alfred Mason prepared the plans.

Bay Minette, Ala.—Bank Building.—Baldwin County Bank has awarded contract for erection of its proposed $4000 building.

Berkeley Springs, W. Va.—Hotel.—Berkeley Springs Hotel Co. is having plans made by Architect Comstock of New York for erection of a four-story building 27x46 feet, to be of mill and iron construction, red brick, limestone, red tile and tin roofing, hardwood finish, and to contain steam heat, elevators, electric wiring, ranges, etc.; cost $200,000.

Birmingham, Ala.—Church.—May & Co. have received contract for erection of new edifice for Third Presbyterian Church; Carr & Co. prepared the plans.

Birmingham, Ala. — Building. — Moerlein Brewing Co., through the agency of W. B. Leedy & Co., has purchased site at Birmingham for $15,000, and will erect a $40,000 building.

Birmingham, Ala.—Office Building.—C. P. Beddow has purchased site at $5000 and will erect a five-story brick office building.

Cambridge, Md.—Office Building.—Theodore G. Ahrens of Baltimore has completed plans for a two-story office building for James A. Higgins at Cambridge; building will be of brick and brownstone, 76x30 feet.

Catonsville, Md.—Cottages.—Leander Neal has prepared plans for three two-and-a-half-story frame and stone cottages for Victor G. Bloede; cost $13,500.

Cedartown, Ga.—Business Building.—W. S. Shiflett has awarded contract to S. N. Clary and Tate & Agan for erection of a two-story brick business building.

Charlotte, N. C.—Warehouse.—Allen Hardware Co. will erect a three-story warehouse 100x40 feet.

Charlotte, N. C.—Library.—Lazenby Bros. of Statesville, N C., have received contract at $25,000 for erection of the proposed Carnegie library at Charlotte.

Columbia, Mo.—University Building.—Ben F. Stewart & Sons have received contract at $24,830 for erection of the proposed dairy building and live-stock buildings on Agricultural College farm of State University. Four other buildings will be erected during the next year, all of which will be of stone and cost about $200,000. Bids for these will be asked within the next month.

Fort Monroe, Va.—Barracks and Guardhouse.—James H. Brinson of Hampton, Va., has been awarded contract at $89,393 for erection of barracks and guardhouse.

Galveston, Texas — Library. — Plans of Eames & Young of St. Louis, Mo., have been selected for the proposed Rosenberg Library at Galveston, to be erected at a cost of $100,000.

Georgetown, Texas—Hall.—Griffith Lumber Co. has contract for erection of proposed $14,500 hall for I. O. O. F.

Goldsboro, N. C.—City Hall and Market.—City has voted issuance of $15,000 of bonds, recently noted, for city hall and market. Address "The Mayor."

Gulfport, Miss.—Bank Building.—Bank of Commerce, being formed by J. R. Pratts, will erect a bank building.

Hampton, Va.—Dwelling.—John J. Livezey of Newport News has awarded contract to James H. Brinson of Hampton for erection of a $6000 dwelling in Hampton.

Jennings, La.—Opera-house.—A. D. McFarlan has adopted plans for erection of an opera-house.

Kansas City, Mo.—Hotel.—John Arbuckle, owner of the Hotel Savor, will enlarge same by erection of a six-story addition 50x164 feet.

Kent Island, Md.—Depots, Offices, etc.—Queen Anne's Railway Co. (principal office, Baltimore, Md.) has commenced erection of buildings at Kent Island, which include freight shed 200x22 feet, office building 20x70 feet, roof 100x22 feet at boat landing, and a covered way for passengers 250 feet long, also two double houses for officers. A number of other buildings and an oyster-packing plant are said to be contemplated.

Memphis, Tenn.—Office.—Illinois Central Railroad Co. has awarded contract for erection of a $10,000 ticket office at Memphis.

Nashville, Tenn.—Store Buildings.—Dr. E. T. Noel will erect a block of store buildings.

Nashville, Tenn.—Engine-house.—Board of public works, Geo. B. Stainback, chairman, will open bids November 11 for erection of new engine-house. Plans and specifications at office of architects, Brown & Brown, 126 North Spruce street. Bids will be received for the work separately or as a whole. Usual rights reserved.

Natchitoches, La.—Jail.—Plans and specifications of Architect T. Hull of Jackson, Miss., have been accepted for proposed $25,000 jail at Natchitoches.

New Berne, N. C.—Residence.—H. W. Simpson has made plans for residence for C. E. Foy.

New Orleans, La.—Office.—Illinois Central Railroad Co. has awarded contract for erection of a $10,000 ticket office at New Orleans.

Newport News, Va.—Bank Building.—Jefferson Avenue Bank (being organized) will erect a bank building.

Oklahoma City, O. T.—Business Building.—Doc & Bill (furniture dealers) will erect a three-story brick building 50x100 feet.

Orange, Texas—Hotel.—Orange Hotel Co., with capital stock of $50,000, has been incorporated for erection of a three-story brick hotel to have electric lights, steam heat, etc. W. H. Stark, Chas. M. Rein, L. Miller and F. H. Farwell are among the stockholders.

Orange, Texas—Building.—L. Miller, president of the L. Miller Lumber & Shingle Co., will erect two-story brick building 50x140 feet.

Richmond, Va.—Hotel.—E. C. Gilbert will erect a $10,000 hotel at Reservoir Park.

Richmond, Va.—Hotel.—A Cookman Leach of Baltimore, Md., has completed plans for proposed $250,000 hotel to be erected at Richmond by Mrs. A. D. Atkinson.

San Antonio, Texas—Church.—First Baptist congregation, Rev. A. J. Harris, pastor, will erect $10,000 edifice, and has purchased site at $3500.

Savannah, Ga.—Business Building.—B. Weitz has let contract to John R. Eason for erection of a three-story brick building after plans by H. W. Witcover.

St. Augustine, Fla.—Business Building.—John H. Bruer is having plans made for a two-story double brick building 50x70 feet, to cost $10,000.

Tampa, Fla.—Packing-house.—W. R. Fuller & Co. have purchased site 70x150 feet, and will erect a two-story building to be used as an orange packing-house.

Wheeling, W. Va.—Business Building.—Aug. F. Carl will ask for bids on three-story business building.

Williamson, W. Va.—Courthouse.—James Damron, clerk county court, will open bids November 30 for erection of courthouse after plans by Frank P. Milburn, Columbia, S. C., which will be on file with county clerk after November 11. Each bid must be accompanied by certified check for $1000. Bond required and usual rights reserved.

RAILROAD CONSTRUCTION.

Railways.

Blytheville, Ark.—The extension of the St. Louis & Memphis Railroad between Blytheville and Luxora is nearly completed, and it is expected that trains will be in operation over it by December 1. It will complete a new route between Caruthersville, Mo., and Memphis.

Bristol, Tenn.—M. Bachman of Clover Bottom, Tenn., is reported as interested in a plan to build an electric railroad between Rogersville and Bristol, an estimated distance of fifty miles. It is stated that Philadelphia and Fall River capitalists are interested in the scheme.

Buford, Ga.—R. J. Owens of Buford and R. W. Shadburn of Cummings are interested in the Cummings & Buford Electric Railroad Co., which proposes building between the towns mentioned. The company is to be capitalized at $500,000, and it is stated that motors will be operated from water-power on the Chattahoochee river.

Chickasha, I. T.—It is announced that work has been begun upon the Oklahoma Western Railroad, projected through a portion of Indian Territory by way of Chickasha, as a number of grading contracts have been let.

Covington, Ga.—It is reported that the Georgia Railroad Co. is considering an extension of its line from Covington to Logansville with a view to forming a connection with the Seaboard Air Line. The estimated length of the extension is twenty miles. Thomas K. Scott at Augusta, Ga., is general manager.

Elkins, W. Va.—The latest report concerning the completion of the West Virginia Central & Pittsburg Railway to Parkersburg is to the effect that the new mileage will be built from Elkins or Belington along the Buckhannon river to a connection with the Little Kanawha Railroad, recently secured by the West Virginia Central Company. C. L. Bretz of Cumberland, Md., is general manager of the company.

Florence, Ala.—It is announced that bonds to the extent of $1,600,000 have been floated in the interest of the Alabama, Tennessee & Northwestern Railway Co., and that this line will be built during the next year. It is projected between Florence and Clifton, Tenn., an estimated distance of eighty miles. Among those interested are J. L. Bell of 29 Broadway, New York, president of the company, and George L. Johnson of Waynesboro, Tenn.

Fort Worth, Texas.—The International & Great Northern Railroad Co. has asked for a franchise from the city authorities to construct the proposed terminal tracks on several streets. The extension is to be built from Waco to Fort Worth. Leroy Trice at Palestine, Texas, is general manager of the company.

Gainesville, Ga.—Grading is rapidly progressing upon the electric railroad between Gainesville and Dahlonega, and arrangements are being made to erect a power station to generate the necessary motor current. A. J. Warner of Gainesville is president of the company.

Georgetown, Ky.—The city council of Georgetown is considering the granting of a franchise to the Georgetown & Lexington Traction Co., which proposes connecting these towns by a trolley system. Among those interested is Chas. J. Bronston of Lexington.

Jackson, Miss.—Announcement is made that the Mobile, Jackson & Kansas City and the Kingston & Central Mississippi railways have been combined and will be extended further north to a connection with some road entering Memphis, Tenn. F. B. Merrill at Mobile is president of the Mobile, Jackson & Kansas City.

Kirkwood, Mo.—The St. Louis, Kirkwood & Manchester Railroad Co., which proposes building an electric line in St. Louis county, has elected D. C. Taylor, president, Merritt Marshall, vice-president, and J. M. Berry, secretary. The company is capitalized at $250,000, and it is understood will construct the new line immediately.

Knoxville, Tenn.—The promoters of the electric railroad between Knoxville and Sevierville have applied for a charter under the title of the Knoxville, Kimberlin Heights & Sevierville Electric Railroad Co. W. T. Goffe of Toronto, Ont., one of the promoters of the enterprise, in a letter to the Manufacturers' Record writes that right of way has been secured for the entire distance, and that electric power will be generated from water-power on the route. The total length of the road is estimated at fifty-four miles, the main line being forty miles in length, with branches aggregating fourteen miles.

Lexington, Ky.—The Manufacturers' Record is authoritatively informed that a company has been organized, with $7,000,000 capital stock, to construct about 140 miles of electric railroads, of which Lexington will be the center. Among those interested are Hon. Geo. D. Davis of Detroit, Mich., and W. J. Loughbridge and Hon. M. C. Alford of Lexington, Ky.

Lonaconing, Md.—The Westernport & Lonaconing Electric Railroad Co. has been incorporated to build between the towns mentioned, a distance of ten miles. It is understood that the company constructing the road between Cumberland, Frostburg and Lonaconing is interested in the project. It includes J. W. Burchinal of Moundsville, W. Va.

Magnolia, Miss.—It is understood that the business men of Summit, Miss., have become interested in a plan to build an electric railroad between Summit, McComb City and Magnolia, an estimated distance of fifteen miles.

Martinsburg, W. Va.—It is reported that the Baltimore & Ohio Railroad Co. is considering the construction of another track between Martinsburg and a point near Harper's Ferry to avoid several grades and curves. The line, if built, will be about twenty miles in length. J. M. Graham at Baltimore is chief engineer.

Mason, Texas.—It is reported that the St. Louis & San Francisco Company has decided to change its route to the Rio Grande and build an extension from Mason to a connection with the Mexican Central in the State of Chihuahua, Mexico. It is understood that a syndicate of St. Louis & San Francisco capitalists have secured control of the Mexican Central, and that both systems will be under the same management. B. F. Yoakum at St. Louis is president of the St. Louis & San Francisco.

McMinnville, Tenn.—A contract has been let to Brooks Bros. of Molena, Ga., for a portion of the branch of the Nashville, Chattanooga & St. Louis Railroad, to be built to the coal fields near Bon Air. Hunter McDonald at Nashville is chief engineer of the company.

Middleton, Mo.—The Minneola, New Florence & Middleton Railway Co. has been organized in Missouri, with $300,000 capital stock, to build between the towns mentioned, an estimated distance of thirty miles. Among those interested is Howard Ellis of New Florence, Mo.

Morgantown, W. Va.—It is reported that right of way for the proposed Monongahela River & Cassville Railroad has been secured to Osage, and that this section of the line will be built at once. A. Milholland of Cumberland, Md., is reported as one of the principal promoters.

Morgantown, W. Va.—It is officially announced that the Morgantown & Kingwood Railroad is to be extended to Reedsville, a distance of five miles from its present terminus, at once. A. Martin, general manager, may be addressed at Morgantown.

Morganton, N. C.—H. N. Millner, one of the promoters of the Trans-Appalachian Railroad, states that surveys have been completed for this line between Lincolnton, on the Seaboard Air Line, Morganton and a connection with the Virginia Southwestern Railroad near Butler, Tenn.

Nashville, Tenn.—The Nashville, Chattanooga & St. Louis Railroad Co. has received a quantity of 80-pound rails, which are to be laid upon the line between Nashville and Chattanooga to replace those now in use. The improvement is under way. Hunter McDonald at Nashville is chief engineer of the company.

Petersburg, Va.—The latest report concerning the electric railroad between Richmond and Petersburg is to the effect that it will be completed by December 10. A number of motor cars for the service have already been received. J. P. Pfetch at Richmond is manager of the construction company.

Piedmont, W. Va.—A correspondent of the Manufacturers' Record writes that the total length of the proposed electric line between Piedmont and Keyser is six and one-half miles. W. M. Foulk has been elected president, and Thos. W. Gocke, secretary. The promoters are business men of the towns mentioned.

Sparrow's Point, Md.—The Maryland, Sparrow's Point & North Point Electric Railway Co. has been incorporated in Baltimore county, with $250,000 capital stock, to build from the eastern suburbs of Baltimore to Sparrow's Point and North Point. The incorporators include Robert S. Carswell and A. N. Bastable of Baltimore, who are also interested in the proposed belt line between Westport and Sparrow's Point.

Tullahoma, Tenn.—Surveys have been completed for the proposed railroad between Lynchburg and Tullahoma, an estimated distance of ten miles. W. H. Hanson of Tullahoma is engineer.

Waycross, Ga.—George D. Wadley, vice-president of the Waycross Air Line Railroad Co., confirms the report that the company has amended its charter so as to include an extension of its line to Birmingham, with a branch to Atlanta. According to Mr. Wadley, it is proposed to build the extensions within the next three years. The total distance to Birmingham is estimated at 397 miles, and to Atlanta seventy-five miles.

Winston, N. C.—Surveys, it is announced, have been completed for the Winston & Wadesboro Railroad between Winston and Lexington, N. C. It is to be completed as soon as possible. The promoting company includes R. G. Rhett of Charleston, S. C.

Yazoo City, Miss.—The latest report concerning the proposed branch of the Illinois Central system between Belzoni and Yazoo City, an estimated distance of thirty miles, is to the effect that construction is to begin in the near future. Surveys have been completed. David Sloan at Chicago is chief engineer of the Central.

Street Railways.

El Paso, Texas.—The El Paso & Juarez Traction Co. and the El Paso Electric Street Railway Co. have secured franchises to build their proposed trolley lines in the city and suburbs.

Knoxville, Tenn.—It is reported that the Knoxville Traction Co. is considering an extension of its electric system to the shops of the Southern Railway Co. at Lonsdale, in the suburbs. C. C. Howell is manager of the traction company.

Natchez, Miss.—H. K. Johnson, one of the promoters of the electric railroad, informs the Manufacturers' Record that it will be forty miles in length, and will be ready for operation by June 1.

New Orleans, La.—The city has sold a franchise to build an electric line over certain streets to the Orleans Railroad Co. E. Perin is president of the company.

Oklahoma City, Okla.—The company promoting the street railroad in Oklahoma City and suburbs has decided to ask for a franchise with a view to building the line in the near future. I. M. Putnam is the local representative of the company, which is reported to be composed of Chicago capitalists.

Portsmouth, Va.—It is announced that Hon. Frank Brown of Baltimore, president of the Berkley Railroad Co., is planning an extension which will connect Portsmouth, Norfolk and Berkley. The work of extending the Berkley line to a point in the suburbs is now in progress.

Machinery, Proposals and Supplies Wanted

Agricultural Machinery.—J. R. Easterling, Barnwell, S. C., is in the market for improved agricultural machinery.

Barrel Machinery.—See "Woodworking Machinery."

Bell.—Petersburg Iron Works Co., Petersburg, Va., wants second-hand bell, to weigh 1000 pounds or more.

Boiler.—W. L. Houser, Fort Valley, Ga., wants 90 or 100-horse-power return tubular boiler.

Boiler and Engine.—See "Woodworking Machinery."

Boilers.—J. B. Quigley, Nevada, Mo., is in the market for high-pressure boilers for water-works.

Brewery Equipment.—Arthur F. Easton, 137 Murray street, Perth, West Australia, wants agents' prices on rack for brewery bottling plant; 250 dozen per day capacity desired; also on water motor for blowing church organ.

Coaling Plant.—M. T. Endicott, chief bureau yards and docks, Navy Department, Washington, D. C., will open bids December 21 for completing construction of two coal sheds, two steel piers and twenty-four steel channel beacons at Dry Tortugas, Fla. Plans, specifications and forms of proposals can be seen at bureau, at naval station, Key West, Fla., or at Dry Tortugas, or will be furnished upon a deposit of $10 to secure return.

Conveying Equipment.—J. Wesley Smith, Gate City, Va., wants addresses of manufacturers of wire tramway or wire rope telegraph, with bucket carriages.

Cotton Gin.—Taylor, King & Co., Zebina, Ga., will want complete cotton-gin equipment next season.

Cotton Machinery.—F. T. Parker, Houston, Texas, is in the market for a second-hand warping machine, one spooler and one cop winder; also spools suitable for warper.

Cotton Mill.—F. L. Martin, 794 Union street, Memphis, Tenn., wants to correspond with makers of machinery for making light fluffy bats (for comforts, quilts, etc.)

Cotton-mill Product.—F. T. Parker, Houston, Texas, is in the market for camel's-hair yarn or woolen worsted yarns No. 8s, 8 to 10 ply.

Electrical Cable.—Board of awards, care of Geo. N. Numsen, city register, City Hall, Baltimore, Md., will open bids November 14 for furnishing 10,000 feet, more or less, of single-conductor arc-light cable. Certified check for $150 must accompany each bid. For specifications and further particulars address Chas. E. Phelps, Jr., chief engineer. Usual rights reserved.

Electrical Machinery.—See "Engine."

Electric Wiring.—J. G. Marshall, chairman, Columbia, S. C., will open bids November 20 for the electric wiring of Statehouse, Hospital for the Insane and other public buildings. Plans and specifications are on file at office of W. B. Smith Whaley & Co., engineers. Bids must be accompanied by certified check for $100. Bond required and usual rights reserved.

Electric-light Plant.—Chas. A. Eastman, Old Orchard, Me., will probably want small dynamo and engine for lighting hotel.

Engine.—See "Saw-mill."

Engine.—Peacock's Iron Works, Selma, Ala., is in the market for a two-horse-power gas or gasoline engine, or a two-horse-power electric motor for alternating current.

Excavation Work.—See "Irrigation Canal."

Fire-department Equipment.—Union Fire Company, Union, S. C., will purchase hook-and-ladder truck thoroughly equipped and about 1000 feet of hose. Address Frank Greer.

Fire Equipment.—Mt. Pleasant, Tenn., is in the market for fire hose and hand reels and other fire apparatus. Address P. S. Chandler, city attorney.

Heating Radiators.—W. M. Absher Co., North Wilkesboro, N. C., wants some second-hand radiators for heating store, etc.

Ice Plant.—Chas. A. Eastman, Old Orchard, Me., will probably want ice plant.

Irrigation Canal.—Henry Mestayer, New Iberia, La., wants bids on construction of irrigating canal; about 50,000 cubic yards of dirt to be moved.

Jail Cells, etc.—H. D. Atkinson, Tennille, Ga., wants addresses of manufacturers of jail cells, window guards, etc.

Knitting Mill.—W. H. Kimball, 704 Vincen-

nes street, New Albany, Ind., wants addresses of makers and dealers in machinery for cotton knitting.

Machine Tools.—Gadsden Car, Foundry & Machine Co., Gadsden, Ala., is in the market for a second-hand punch.

Mining Equipment.—D. C. Roberts, Smithland, Ky., will need log washers and hand cleaning machinery for zinc mines.

Paper Cutter.—Moore & Co., Gainesville, Ga., wants addresses of manufacturers or dealers in paper cutters (for wrapping in rolls).

Pumping Machinery.—J. B. Quigley, Nevada, Mo., is in the market for pumping machinery.

Railway Equipment.—W. M. Absher Co., North Wilkesboro, N. C., wants a few sets of wheels or wheels and axles for hand cars; second-hand preferred.

Rice Machinery.—Gustav A. Baumgarten, Schulenburg, Texas, wants prices on machinery for hulling, cleaning and polishing rice ready for market.

Saw-mill.—A. Backman, Chauncey, Ga., will want to purchase small portable saw-mill and 18 to 20-horse-power engine.

Sewers, etc.—M. E. McCown, mayor, Durham, N. C., will open bids November 20 for constructing pipe sewers and for furnishing sewer pipe; extent of proposed work, twenty-eight miles of pipe sewers from eight to twenty-four inches diameter. For specifications, forms of proposals, etc., address J. L. Ludlow, engineer, Winston, N. C., or "City Clerk" at Durham.

Slips.—M. T. Endicott, chief bureau of docks and yards, Navy Department, Washington, D. C., will open bids November 30 for constructing slips for mooring torpedo vessels at navy-yard, Norfolk; estimated cost $70,000. Plans and specifications can be seen at navy-yard or at bureau, or will be furnished upon deposit of $10 to secure return.

Soap Molds.—Curene Medicine Co., Lynchburg, Va., wants to correspond with manufacturers of soap molds.

Soft-drinks Machinery, etc.—C. F. Jamison, Glen Jean, W. Va., wants addresses of manufacturers of ginger ale, pop and soft-drinks machinery and equipment for making the drinks.

Street Improvements.—C. Lawrence Lavretta, president board of public works, Mobile, Ala., will open bids November 14 for paving approximately 17,000 square yards of street with asphalt, together with necessary curbing, grading and the storm drainage for same, plans of which are on file at office of chief engineer, to whom application may be made for specifications for the work contemplated. Usual rights reserved.

Wallpaper Manufacturers.—Blue Ridge Mica Co., Bramwell, W. Va., wants addresses of manufacturers of wallpaper.

Water Motor.—See "Brewery Equipment."

Water-works.—See "Pumping Machinery" and "Boilers."

Well-drilling.—R. W. Crowder, Waynesboro, Va., wants to contract with experienced drillers for gas and oil for putting down wells.

Wire.—B. R. Butler, Fayetteville, N. C., is in the market for large quantities of wire, principally high-grade coppered steel spring wire; wants prices in carload lots f. o. b. Fayetteville.

Woodworking Machinery.—A. P. White, 310 Union street, Knoxville, Tenn., wants addresses of manufacturers of woodworking machinery; also woodpick machines.

Woodworking Machinery.—Crescent Woodenware Manufacturing Co., Stevenson, Ala., wants addresses of manufacturers of machinery for making butchers' skewers.

Woodworking Machinery.—Alabama Portland Cement Co., Limited, Demopolis, Ala., is in the market for 75-horse-power engine and 100-horse-power horizontal boiler; also stave, heading and barrel setting-up machinery for manufacturing 1000 barrels per day; second-hand preferred.

Woodworking Machinery.—Byrd Cain, Sparta, Tenn., will want machinery for handle factory.

FINANCIAL NEWS.

New Corporations.

The Bank of Monterey, Tenn., has been chartered, with $12,000 capital stock, by L. B. Bennock and others.

Spencer E. Carr and others have organized the Carr Investment Co. in St. Louis, with $100,000 capital stock.

Arrangements are being made to organize an insurance company at Yorkville, S. C., by J. R. Lindsay and others.

J. F. Lipscomb and others have organized the First National Bank at Celina, Texas, with $25,000 capital stock.

A. B. Wood and F. V. Taylor are interested in the Texas Investment Co., recently organized at Galveston with $50,000 capital stock.

Among those interested in the new bank being organized at Chipley, Ga., are L. E. Floyd and J. L. Allen. The bank is capitalized at $25,000.

M. A. Locke has been elected president, and A. M. Wood, vice-president, of the Bank of Little River County, recently organized at Ashdown, Ark.

The Cordell State Bank, recently organized at Cordell, Okla., is capitalized at $100,000. Among those interested are W. H. Dean and H. D. Young.

The stockholders of the Jefferson Bank, which has been organized at Newport News, Va., has elected L. C. Lenz, president, and S. W. Holt, vice-president.

E. B. Davis is president, and W. R. King, cashier, of the First National Bank, which has begun business at Throckmorton, Texas, with $25,000 capital stock.

The Searcy County Bank is the title of a new institution at Marshall, Ark., capitalized at $15,000. J. F. Henley has been elected president, and J. L. Bromley, vice-president.

L. O. Benton of Monticello, Ga., has been elected president of the bank recently organized at Cedartown, Ga. L. S. Ledbetter is vice-president, and E. C. Benton, cashier.

A dispatch from Gulfport, Miss., is to the effect that the bank being organized in that city will be called the Bank of Commerce. Among those interested are J. R. Kelly and A. E. Jordan.

Arrangements are being made to organize an insurance company at Maysville, Ky., with $100,000 capital stock. R. A. Carr has been selected as president; J. A. Reed, treasurer, and J. M. Collins, secretary.

The Virginia Mutual Building and Loan Association, recently organized at Norfolk, has elected Lundy R. Wright, president; F. D. Willis, vice-president, and C. P. Jones, secretary. The association is capitalized at $100,000.

New Securities.

The First National Bank at Wilson, N. C., has decided to increase its capital stock to $100,000.

The town of Caruthersville, Mo., has voted in favor of issuing $26,000 in bonds for improvements.

The Fidelity Trust Co. of Kansas City, Mo., has decided to increase its capital stock from $500,000 to $1,000,000.

The Jefferson County Bank of Fayette, Miss., has purchased the issue of $14,000 in improvement bonds of this town.

The People's Bank of Mobile, Ala., has purchased the issue of $65,000 in bonds recently offered investors by the city authorities.

Messrs. N. W. Harris & Co. of Chicago, Ill., have purchased the issue of $250,000 in 4 per cent. improvement bonds of Memphis, Tenn.

The Merchants and Planters' Bank of Texarkana, Ark., has purchased the issue of $58,000 in 6 per cent. improvement bonds of this district.

W. A. Jones, secretary, will receive bids until November 30 for the issue of $10,000 in 5 per cent. school bonds of the town of Sylvester, Ga.

The town of Gueydan, La., has voted in favor of issuing $50,000 in 5 per cent. bonds for drainage purposes. The town clerk will give further particulars.

The Commonwealth Trust Co. of St. Louis has decided to increase its capital stock from $1,000,000 to $2,000,000. The company has only been organized a few months.

The town of Greenwood, S. C., will probably place on the market an issue of $40,000 in 5 per cent. bonds during the present year. The mayor may be addressed.

M. N. Childs, mayor, may be addressed relative to the issue of $5000 in 5 per cent. bonds offered investors by the town of Oglethorpe, Ga. Bids will be received until November 18.

The city of Martinsburg, W. Va., has disposed of $76,000 in refunding bonds at 4 per cent. interest. They were sold to local investors and to W. R. Todd & Co. of Cincinnati, Ohio.

Cannon county, Tennessee, will vote on November 9 on the question of issuing $138,000 in railroad securities. The board of commissioners may be addressed at Woodbury, Tenn.

Bids will be received until November 19 by R. H. Kerr, chairman of the finance committee, for an issue of improvement bonds of Birmingham, Ala. The bonds will bear interest at the rate of 6 per cent.

The issue of $130,000 in 5 per cent. bonds recently placed on the market by the city of Greensboro, N. C., remains unsold, and may be offered investors in the near future. The mayor will give further information.

The city of Baltimore, Md., will offer for sale on December 23 an issue of $1,000,000 in 3½ per cent. bonds in the interest of the Western Maryland Railroad. James H. Smith, city comptroller, may be addressed.

Financial Notes.

E. W. Robertson has been elected president of the Central National Bank of Columbia, S. C., recently reorganized.

The Firemen's Insurance Co. of Baltimore has decided to reduce its capital stock to $400,000, and to increase its surplus fund to $500,000.

Arrangements are being made to change the title of the Bank of Kiel, Okla., to the First Bank of Hitchcock. Among those interested are H. C. and C. D. Boardman.

A plan is under way to form a combination of the various bonding companies in the United States, and it is reported that the Fidelity & Deposit Co., the United States Fidelity & Guaranty Co. and the American Bonding & Trust Co. of Baltimore will be included.

Features of the convention next week of the Maryland Bankers' Association will be a reception and dinner in honor of Mr. William B. Ridgeley, recently appointed comptroller of the currency, and a visit to the works of the Maryland Steel Co. at Sparrow's Point.

SOUTHERN COTTON-MILL STOCKS.

Quotations Furnished by Hugh MacRae & Co., Wilmington, N. C., for Week Ending November 5.

	Bid.	Asked.
Abbeville Cotton Mills (S. C.)	...	91
Aiken Mfg. Co. (S. C.)	90	93
American Spinning Co. (S. C.)	...	105
Anderson Cotton Mills (S. C.)	120	130
Arkwright Mills (S. C.)	117	...
Augusta Factory (Ga.)	70	73
Avondale Mills (Ala.)	82½	...
Belton Mills (S. C.)	101	...
Bennettsville Mfg. Co. (S. C.)	...	90
Cabarrus Cotton Mills (N. C.)	120	130
Clifton Mfg. Co. (S. C.)	175	...
Clinton Cotton Mills (S. C.)	121	...
Courtenay Mfg. Co. (S. C.)	...	115
Dallas Mfg. Co. (S. C.)	90	100
Darlington Mfg. Co. (S. C.)	94	...
Eagle & Phenix Mills (Ga.)	100	...
Enoree Mfg. Co. (S. C.)	...	112½
Enterprise Mfg. Co. (Ga.)	...	100
F. W. Poe Mfg. Co. (S. C.)	120	...
Gaffney Mfg. Co. (S. C.)	...	113
Granby Cotton Mills (S. C.) 1st Pfd.	100½	103
Graniteville Mfg. Co. (S. C.)	160	165
Greenwood Cotton Mills (S. C.)	101	102
Grendel Mills (S. C.)	101	103
Henderson Cotton Mills (N. C.)	120	125
Henrietta Mills (N. C.)	...	200
John P. King Mfg. Co. (Ga.)	95	...
Langley Mfg. Co. (S. C.)	104	...
Laurens Cotton Mills (S. C.)	139	145
Lockhart Mills (S. C.)	105	108
Louise Mills (N. C.)	...	100
Lynchburg Cotton Mills (Va.)	125	130
Lynchburg Cotton Mills (Va.) Pfd.	145	150
Manchester Cotton Mills (S. C.)	...	114
Mayo Mills (N. C.)	150	...
McColl Mfg. Co. (S. C.)	...	103
Newberry Cotton Mills (S. C.)	114	...
Odell Mfg. Co. (N. C.)	99	100½
Orr Cotton Mills (S. C.)	...	103
Pacolet Mfg. Co. (S. C.)	...	200
Pelzer Mfg. Co. (S. C.)	172	180
Piedmont Mfg. Co. (S. C.)	...	180
Raleigh Cotton Mills (N. C.)	116	...
Richland Cotton Mills (S. C.)	106	...
Richland Cotton Mills (S. C.) Pfd.	100	102½
Roanoke Mills (N. C.)	90	100
Sibley Mfg. Co. (Ga.)	75	78
Southern Cotton Mills (N. C.)	100	...
Spartan Mills (S. C.)	130	138
Trion Mfg. Co. (Ga.)	125	135
Tucapau Mills (S. C.)	128	...
Union Cotton Mills (S. C.)	...	138
Union Cotton Mills (S. C.) Pfd.	100½	105½
Victor Mfg. Co. (S. C.)	110	113
Warren Mfg. Co. (S. C.)	90	...
Warren Mfg. Co. (S. C.) Pfd.	105	...
Washington Mills (Va.) Pfd.	100½	102½
Whitney Mfg. Co. (S. C.)	...	120
Wilmington Cot. Mills (N. C.) Pfd.	100	105
Wiscassett Mills (N. C.)	115	120

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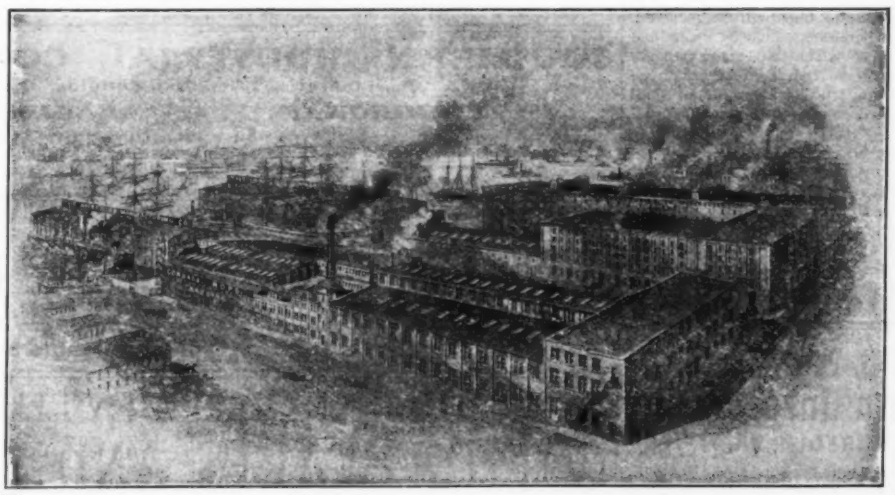

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PROPOSALS.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., October 25th, 1901.—Sealed proposals will be received at this office until 2 o'clock P. M. on the 20th day of November, 1901, and then opened, for the installation of a conduit and wiring system for the U. S. Post Office building at Kansas City, Kansas, in accordance with the drawings and specification, copies of which may be obtained at this office or at the office of the Superintendent of Construction at Kansas City, Kansas, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.

THE County Board of Commissioners of Spartanburg County, South Carolina, will receive bids until December 3d, 1901, for $50,000.00 of 20-year 4 per cent. coupon bonds of said county, bearing date January 1, 1902, interest payable 1st January and 1st July.

The right to reject any and all bids is reserved. These bonds are non-taxable.

The present bonded debt of the county is $213,800.00, and the assessed value of property is $11,803,371.00. Copy of act authorizing bonds and any further information can be had by addressing

J. D. LEONARD,
County Supervisor, Spartanburg, S. C.

Notice to Contractors.

WILLIAMSON, WEST VA., Nov. 1st, 1901.

The County Commissioners for Mingo County, West Virginia, invite sealed proposals for the erection of a new County Court House, agreeable to the plans and specifications prepared by Architect Frank P. Milburn, Columbia, S. C. Said plans and specifications will be on file with the County Clerk of said County on and after November 11th, 1901. Bids will be received until 12 o'clock noon, November 30th, 1901 Each bid to be accompanied with a certified check for $1000, made payable to the Clerk of Mingo County Court, as evidence, if their bid is accepted, they will enter into contract at once with the County and file an acceptable bond for the faithful performance of their contract. The County Commissioners reserve the right to reject any and all bids. Test:

JAMES DAMRON, Clerk,
County Court, Mingo County, W. Va

PROPOSALS

For Hospital Buildings for the Mountain Branch, N. H. D. V. S.

OFFICE OF THE NATIONAL HOME FOR DISABLED VOLUNTEER SOLDIERS.
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New York City, October 10th, 1901.

SEALED PROPOSALS will be received at this office until 12 M. Monday, the 11th day of November, 1901, for furnishing materials, labor, etc., for the construction of Hospital buildings at the Mountain Branch of the National Home for D. V. S., near Johnson City, Tenn. Plans and specifications can be seen, necessary information obtained and blank forms for proposals procured on application to this office or to the Architect, J. H. Freedlander 244 Fifth Avenue, New York City, or at the office of the Superintendent of Construction near the site of the work.

The Home reserves the right to reject any or all bids and waive defects.

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Approved:
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WATER-WORKS.

FAYETTE, MISS.

Sealed bids will be received by the Board of Mayor and Aldermen of the Town of Fayette, Miss., and publicly opened in the Mayor's office on December 2, 1901, at 3 P. M., for the furnishing of all material necessary and constructing a complete system of Water-Works for the town, except the well, upon which separate bids will be received. Each bid must be accompanied by a certified check equal to 5% of said bid, made payable without reserve to the Treasurer of the Town of Fayette, Miss., which amount shall become forfeited to the town as liquidated damages should the person or persons to whom contract is awarded fail to enter into contract and furnish satisfactory bond equal to 50% of contract, within 10 days from date of award. The right is reserved to reject any or all bids. Plans and specifications may be seen at the Mayor's office. For synopsis of contract and form of bid, address

GEO. V. D. SCHOBER, Town Clerk.
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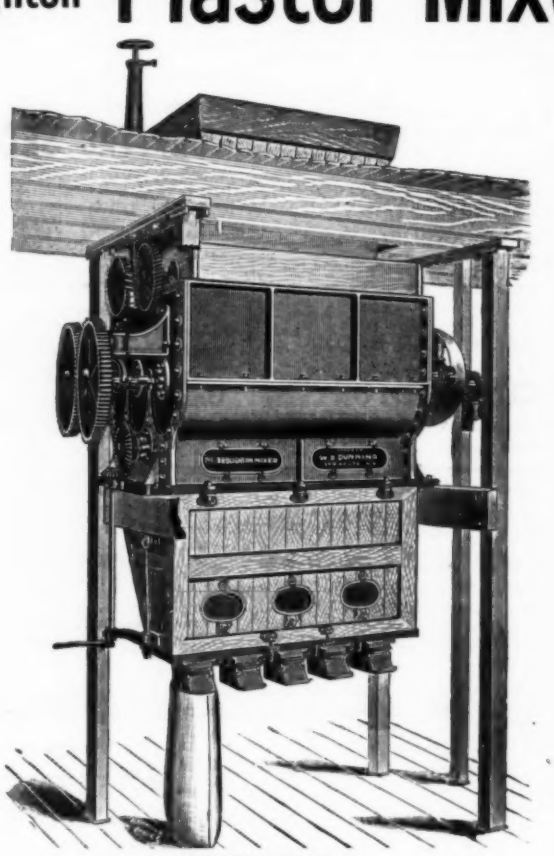

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Of Spartanburg County, South Carolina,
ON DECEMBER 2, 1901.

By virtue of a decree of the Court of Common Pleas for Spartanburg County, in the State of South Carolina, In Re Morgan Iron Works, plaintiff against Fairmont Mills; defendant, I, J. J. Burnett, Master for Spartanburg County, in said State, will sell at public out-cry, before the Court House door, in the City of Spartanburg, S. C., on salesday in December, 1901, being the second day of said month, the following described property on the following terms, to wit:

The Fairmont Mills property, situate in Spartanburg County, S. C., on the waters of Middle Tyger river, including the real estate, one hundred and forty-one acres, more or less, all the machinery pertaining to the mill property and the goods in process of manufacture.

Buildings—Main mill 300 ft. x 104 ft. Picker room and rope way 52 ft. x 33 ft., one-story (brick). One-story cloth room, connected to main mill, 57 ft. x 32 ft. (wood). Two brick stores, connected, each 70 ft. x 25 ft. and 1 and ½ and 2 stories high. One stone cotton storage house, with wood front. One large stable, (wood). Gin house, with one 80-saw gin. Corn mill and planing machine on opposite side of the river from the cotton mill and operated by an independent water wheel. Thirty-two dwelling and tenement houses, containing in all about 140 rooms.

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NOVEMBER 28, 1901.

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119 S. 4th Street, Phila., Pa.

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30 FLAT CARS, Journals, 3¾x7. 15 FLAT CARS, 30,000-lbs. Capacity.

IMMEDIATE DELIVERY. JUST REBUILT.

2 75-ton Special B Vulcan B Steam Shovel; Good as new. 1 Style-A Marion 1½-yd. Dipper.

36"-Gage Saddle Tank Locomotives of all weights, also Dump Cars. We own all plant offered and guarantee it to be as represented. Write or wire

TORBERT & PECKHAM, 1603-5 Monadnock Block, **CHICAGO, ILL.**

SHOPS: CHICAGO. NEW YORK OFFICE, St. Paul Bldg.

BUYERS of Machinery, Tools, Mining and Manufacturing Supplies can find anything they need by referring to the advertising pages of the MANUFACTURERS' RECORD.

SELLERS of anything that is required by Machinists, Foundrymen, Iron Manufacturers, Coal and Iron Ore Miners, Textile Manufacturers, Woodworkers and Artisans of every class can reach more customers through the MANUFACTURERS' RECORD than in any other way.

BALTIMORE, MD.

Would

Power

At a fuel cost of

$5.00 Per Year

per ten-hour horse-power, be any attraction to you?

Wheeling, West Va.

can do even better than that.

For particulars, ask the

SECRETARY

Wheeling Board of Trade.

Woodworking PLANTS

WANTED

At a number of points in the South along the line of the

Southern Railway.

There are good openings for Woodworking Plants, such as FURNITURE FACTORIES, PLANING MILLS, SPOKE AND HANDLE FACTORIES, or other plants using pine or hardwoods. Local people will invest from $6,000 to $8,000 with an experienced man who will himself invest a like amount or more and do a legitimate business. For information write to

M. V. RICHARDS,

Land & Industrial Agent, Washington, D. C.

SOUTHERN RAILWAY.

SPECIAL Advertisements OF GENERAL Interest.

OPPORTUNITIES FOR INVESTORS.

ADVERTISING RATES FOR SPECIAL ADVERTISMENTS:

Inches.	1 time.	2 times.	3 times.	4 times.
1	$ 1.75	$ 3 00	$ 4.25	$ 5.00
2	3.00	5.50	7.50	10.00
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6	8 00	15 00	21.50	28.00
¼ page (13 in.)	16.00	30.00	40.00	50.00

Coal, Iron and Timber Lands.

Come to West Virginia.

Why? It has more and a greater variety of undeveloped resources close to Eastern and Western markets than any other State. The WEST VIRGINIA CENTRAL & PITTSBURG RAILWAY penetrates the heart of the virgin timber forests and coal deposits. Cheap fuel, cheap raw material and unsurpassed railway facilities make that territory most desirable for manufacturing industries. For information in regard to timber and coal lands and manufacturing sites address

HOWARD SUTHERLAND,
Gen'l Land Agent, ELKINS, W. VA.

For Sale—From 3000 to 3500 Acres of

TIMBER LAND

situated in Georgia, Orangeburg Co., S. C., near the South Carolina Road. About half of the tract is adapted for planting purposes, cotton, rice, corn, potatoes, sugar cane and tobacco, balance standing timber, within easy reach of Branchville and Bormantown. Apply to

S. DIBBLE, Orangeburg, S. C.
VANDERBILT & HOPKINS, 126 Liberty St., N. Y.

FLORIDA TIMBER.

40,000 acres saw mill timber, average 2,000 feet per acre. Lies along the Seaboard Air Line Railway. Easy logging, low freight rates to Gulf and Atlantic Port. Price $1.25 per acre, includes land, contains considerable cypress.
Send for prospectus.

BROBSTON, FENDIG & CO.,
BRUNSWICK, GA.

TIMBER, COAL & FARM LANDS

FOR SALE.

Correspondence with actual buyers solicited

E. L. BEARD,
Academy, W. Va.

FOR SALE.

6000 Acres of Coal and Farm Lands

IN TENNESSEE,

On Cumberland Mountain. Some hardwood timber on the land Would take in part some unincumbered income property.

E. L. THOMAS, Bethlehem, Ga.

ALABAMA COAL LANDS.

4000 Acres of the finest **COAL LANDS** in the great Birmingham District for sale, close to four lines of railway. The only large tract of coal lands still on the market.

W. A. HUMPHRIES,
General Land Agent, ENSLEY, ALA.

If you wish to keep posted on the progress of the South, read the Manufacturers' Record. Price $4 a year.

Water Powers and Mill Sites.

FOR SALE.

40,000 Acres Round Pine Timber Lands.

Near S. A. L. Railway and Plant System, in Lake County, Fla. Easy terms.

S. LOGAN LANG, Camden, S. C.

ROANOKE NAVIGATION & WATER POWER CO.

Weldon, North Carolina.

LESSORS OF

Water Power and Electric Power.

Unrivalled location for

INDUSTRIAL ENTERPRISES

at Junction of Atlantic Coast Line and Seaboard Air Line Railway Systems.
Steamboat connection with Norfolk, Va.
12 hours' travel from New York City.
Operates Nine Miles of Canals and Electric Power Transmission Plants.

Price for Water Power:

$15.00 Per H. P. Per Year,
24 Hours' Use Daily.
THIS INCLUDES BUILDING SITE.

Electrical Power;

$15.00 PER H. P. PER YEAR,
20 Hours' Daily Use.

OTHER INDUCEMENTS:

Proximity to Raw Material and Market Centres.
Favorable Rates for Manufactured Products.
Free Building Sites.
Low Taxes, Exemptions, etc., etc.
Correspondence Solicited.

JAS. W. WILSON, President.

Magnificent Site for Pulp Mill, &c.

On Seaboard Air Line and river navigable 40 miles for light draft boats into a timber country untouched by railroads. Over 200 horse power available.

To the Manufacturer:

No sites for **Cotton and Woolen Mills** are more attractive or valuable than those to be found on the

Nashville, Chattanooga & St. Louis Railway.

The water powers are superb; coal for fuel convenient and low in price; the cotton fields almost within sight and sound of the water powers, with low rates on cotton from the various cotton markets to the mill sites (ask for tariffs) and the labor abundant, efficient and cheap. No more healthful region exists in the United States than that penetrated by the system of the Nashville, Chattanooga & St. Louis Railway. The water powers occur on numerous streams on the Huntsville & Sparta Division and on the Western & Atlantic Railroad, and range in dynamic force from 500 to 12 000 horse powers.

The prices of steam coal at the mills vary from $1.00 to $1.75 per ton. Labor is 25 per ct. cheaper than in the rigorous climate of the North, and finished goods may be transported to all markets, domestic and foreign, at rates as favorable as those accorded to other manufacturing districts in the United States. For descriptive pamphlets, maps, rates, etc., call on or address

J. B. KILLEBREW,
Industrial and Immigration Agent,
NASHVILLE, TENN.

FOR SALE.

Factory Sites with Cheap Electric Power.

Situated at junction of two main lines of railway, 25 miles from Richmond, Va.

Address **W. C. NOLAND,**
Chamber of Commerce Bldg., RICHMOND, VA.

HELP WANTED.

Advertisements under this head will be inserted at the rate of one cent a word for each insertion.

WANTED.—Young man, unmarried, stenographer and typewriter; one familiar with iron work business State experience and salary wanted. PEACOCK'S IRON WORKS, Selma, Alabama.

WANTED—A Bill Cutter; one who thoroughly understands cutting doors, sash and blinds. MUST know the business. WOODWARD LUMBER CO., Augusta, Ga.

HOSE WAGON FOR SALE.

We have on hand a Hose Wagon for one horse, of new design, not so expensive as our highly finished hose wagons. Material and workmanship first-class; nickel-plated body and seat railings; rotary gong; 2 tubular nickel-plated fire lanterns; 1 fire axe; 1 crowbar; cushion; capacity, 800 feet cotton hose: weight about 1 300 lbs. Photos and particulars furnished on application. Price $325.

A. F. & S. E STEWART, Rochester, N. Y.

Miscellaneous Properties and Investment Opportunities.

Cotton Mill For Sale

THE FAIRMONT MILLS PROPERTY
Of Spartanburg County, South Carolina,
ON DECEMBER 2, 1901.

By virtue of a decree of the Court of Common Pleas for Spartanburg County, in the State of South Carolina, In Re Morgan Iron Works, plaintiff against Fairmont Mills; defendant, I, J. J. Burnett, Master for Spartanburg County, in said State, will sell at public out-cry, before the Court House door, in the City of Spartanburg, S. C., on salesday in December, 1901, being the second day of said month, the following described property on the following terms, to wit:

The Fairmont Mills property, situate in Spartanburg County, S. C., on the waters of Middle Tyger river, including the real estate, one hundred and forty-one acres, more or less, all the machinery pertaining to the mill property and the goods in process of manufacture.

Buildings—Main mill 300 ft. x 104 ft. Picker room and rope way 52 ft. x 33 ft., one-story (brick). One-story cloth room, connected to main mill, 57 ft. x 32 ft. (wood). Two brick stores, connected, each 70 ft. x 25 ft. and 1 and ½ and 2 stories high. One stone cotton storage house, with wood front. One large stable, (wood). Gin house, with one 80-saw gin. Corn mill and planing machine on opposite side of the river from the cotton mill and operated by an independent water wheel. Thirty-two dwelling and tenement houses, containing in all about 140 rooms.

Spindles, 6,144, and Looms, 176.

Terms of Sale—50 per cent. cash; 25 per cent. in three months, and 25 per cent. in six months from date of sale; the credit portion to bear interest from day of sale and to be secured by bond of the purchaser and mortgage of the property sold; the purchaser to insure the property for not less than $50,000 and assign the insurance to the mortgagee as his interest may appear. The purchaser to pay for papers, stamps and recording, and to have the privilege of paving all cash if he desires.

Upset price $75,000, and each bidder required to deposit a certified check for $2,500 before his bid is cried, which shall be credited on his purchase, if he becomes the purchaser, and to be forfeited if he fails to comply with the terms of the sale.

The Merchandise will be sold by me at same time and place for cash to the highest bidder at a per cent. of the inventory of the goods then on hand, made at the cost price of the same.

A committee of experts (3) visited the mill on October 8, 1901, and made a written report describing the mill property in detail, a copy of which can be had upon application to me.

J. J. BURNETT.
Master for Spartanburg Co., S. C.
NOVEMBER 28, 1901.

FOR SALE.

One of the most complete plants for the manufacture of Hay, Hoe, Rake, Fork and Shovel Handles in the South. Ash timber can be had at reasonable figure sufficient to run plant from ten to twenty years. Big bargain, terms satisfactory, reason for selling, too much business.

ADDRESS,

HOUSTON & LIGGETT,
LEWISBURG, TENN.

For Sale at a Sacrifice.

Complete 20,000 feet Saw Mill, one locomotive, two miles rail, 6000 acres pine timber, average 3000 feet per acre. Enough additional timber may be secured to operate ten years. Mill and timber located on Suwanee River. Good freight rate to Atlantic ports.

LIVE OAK MFG. CO., Live Oak, Fla.

If You Want to Know

Anything about the South, about its resources, the progress of its development, the establishment and growth of new enterprises, you can find it all in the MANUFACTURERS' RECORD, and only there. There is no other medium that will keep you so well posted about anything that pertains to the South.

The MANUFACTURERS' RECORD is published weekly, and will be mailed to you one year for Four dollars, six months for Two dollars, or three months for One dollar. Sample copies free.

BALTIMORE, MD.

TO Real Estate Agents:

Do you own a farm? The question is pertinent because a great many Real Estate Agents even in the cities, and more largely of course in the towns, are owners of farm property. In many cases it is an incumbrance instead of a profitable asset. Or even if it yields a revenue this might be made larger. If you have any such interest as this in farming, stock raising, fruit growing, or any agricultural pursuit, don't you think you might find some valuable and helpful suggestions and ideas in a high-class periodical of Southern agriculture, such as the Southern Farm Magazine? It is only a dollar a year. Don't you want it? Published by Manufacturers' Record Publishing Co., Baltimore.

Towns Wanting Factories.

"CEDARTOWN, GA."

Offers exceptional advantages for Textile, Iron, Wood and Mining Industries. It has excellent Shipping Facilities, Low Taxes, Cheap Fuel, abundance of Raw Material.

Cedartown, Ga., is

rapidly establishing a reputation as one of the leading industrial centers, there being few larger cities more favorably or widely known in the South. All branches of business can find profitable openings here.

Cedartown, Ga., has

Underground Sewerage, Water Works and Electric Light Plant, Churches and Good Public Schools.

Persons desiring to locate in the South are invited to

WRITE TO

Cedartown Company,

119 S. 4th Street, Phila., Pa.

FOR SALE.

30 FLAT CARS, Journals, 3¾x7. 15 FLAT CARS, 30,000-lbs. Capacity.

IMMEDIATE DELIVERY. JUST REBUILT.

2 75-ton Special B Vulcan B Steam Shovel; Good as new. 1 Style-A Marion 1½-yd. Dipper.

36"-Gage Saddle Tank Locomotives of all weights, also Dump Cars. We own all plant offered and guarantee it to be as represented. Write or wire

TORBERT & PECKHAM, 1603-5 Monadnock Block, **CHICAGO, ILL.**

SHOPS: CHICAGO. NEW YORK OFFICE, St. Paul Bldg.

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BALTIMORE, MD.

Would

Power

At a fuel cost of

$5.00 Per Year

per ten-hour horse-power, be any attraction to you?

Wheeling, West Va.

can do even better than that.

For particulars, ask the

SECRETARY

Wheeling Board of Trade.

Woodworking PLANTS

WANTED

At a number of points in the South along the line of the

Southern Railway.

There are good openings for Woodworking Plants, such as FURNITURE FACTORIES, PLANING MILLS, SPOKE AND HANDLE FACTORIES, or other plants using pine or hardwoods. Local people will invest from $6,000 to $8,000 with an experienced man who will himself invest a like amount or more and do a legitimate business. For information write to

M. V. RICHARDS,

Land & Industrial Agent, **Washington, D. C.**

SOUTHERN RAILWAY.

Bargains in Machinery

FOR IMMEDIATE DELIVERY.

Four Locomotives

FOR QUICK SALE.

1 25-ton Standard Gauge Switcher, with slope back tender and air brake.
1 25-ton Standard Gauge, American Type with air brake; cylinders 14"x22".
1 18-ton 30" Gauge Saddle Tank; cylinders 10"x 16"; four 36" drivers.
1 12½-ton 30" Gauge Saddle Tank; cylinders 9½" x14"; four 28" drivers.

All in good running order.

THOMAS P. CONARD,
119 S. Fourth St. PHILADELPHIA, PA.

FOR SALE.

SECOND-HAND WOOD-WORKING MACHINERY.

14" Keystone Matcher.
14" Preble Matcher.
24x6 Weatherby, Rug & Richardson; 24x6 Hoyt Bros.; 8" S. A. Wood Fast Feed Matcher.
27x12 Endless Bed Surfacer, S. A. Woods.
24x6 J. A. Fay Incline Bed Cabinet.
12" Inside Woods Moulder.
10, 8, 6 and 4" Outside Moulders, all makes.
Greenlee Self Feed Saw, Saw Tables.
38 Rawley & Hermance Re-saw.
24 H. B. Smith Re-saw.
Tenoners, Pony Planers, Mortisers, Jig Saws, Sanders, Gasoline Engines, Fans, Jointers, Lathes.

Blue prints of all machines will be sent upon application. Write and get our prices before buying.

PRICE MACHINERY CO.
507 Great Northern Bldg. CHICAGO, ILL.

Second-Hand ROOTS Blowers.

All Sizes at Bargain Prices.

WRITE TO

H. M. PAPWORTH,
No. 109 Liberty Street
N. Y. CITY.

Second-hand Machinery for Sale.

One marine steel fire box boiler 10 feet long, 73 inches diameter.
Eight cylinder boilers, 36 inches diameter, 36 feet long.
One invincible three-roll 42-inch sander.
One Lane & Bodley engine, 14x20.
One smoke stack.
One single cylinder slide valve 15 H. P. hoisting engine.
One balanced slide valve engine, 45 H. P.
One Wm. E. Hill & Co.'s drag saw.
One moulding machine.
One surfacer. One panel planer.

THE CYPRESS LUMBER CO., Apalachicola, Fla.

STEAM ENGINES.

1 20" and 36"x48" Tandem **Hamilton** Corliss, wheel 22'x56" face.
1 18 and 38x48 Tandem Corliss, wheel 22' diameter x 50" face.
1 36x72 Wheelock.
1 29x72 Wheelock.
1 30x60 Harris Corliss right and left hand wheels, 58" face by 20 ft. diameter.
1 22x36 Tangye frame Porter-Allen.
1 20"x48" Geo. H. Corliss.
1 18x48 Greene.
1 10"x24" Harris Corliss.
3 12 and 20x12 Westinghouse Compound.
1 16 in. and 27 in.x16 in. Westinghouse compound.
2 13"x12" Erie Ball.
2 12"x12" Ball automatic.
2 13 in.x14 in. Watertown automatic.
1 14 in.x13 in. Armington & Sims automatic.
1 15½ in.x16 in. New York safety automatic.
3 15½ in.x15 in. Armington & Sims automatic.
1 16 in.x16 in. Ball automatic.
1 18½x18 in. Ideal automatic.
2 16x16 Ames automatic.
2 11x12 Ames automatic.

BOILERS.

2 375 H. P. Sterling water tubes for 150 lbs.
7 125 H. P. Ames Return Tubulars.
2 135 H. P. Vertical Manning.
2 500 H. P. Hazelton boilers.

CONDENSERS.

1 300 H. P. Conover Condenser.
3 325 H. P. Davidson condensers.

Blowing Engine.

1 E. P. Allis Engine with steam cyl. 16"x42"; air cyl. 36"x42".

Railway Generators.

4 300 K. W. M. P. 4, General Electric.
3 100 K. W. M. P. 4, General Electric.
4 60 K. W. Edison bi-polar.

MOTORS.

110, 220, 500-volt motors, from 1 H. P. to 200 H. P.

ALSO

ALTERNATORS,
ARC DYNAMOS,
LAMPS, STREET-CAR, ETC.

ROSSITER, MacGOVERN & CO.
Electrical and Steam Machinery,
141 Broadway, N. Y. Factory, Jersey City, N. J.
SEND FOR NEW CATALOG.

WANTED.

One Asphalt Steam Roller,

From three to five tons in weight.

GRANT & WILLIAMS,
Park Row Building, NEW YORK.

FOR SALE—3-ton REFRIGERATING MACHINE, complete, with coils. Practically new. $550. HOLMES ROSE ELECTRIC CO., 215 N. Calvert Street, Baltimore, Md.

New and Second-Hand Machinery

1,000-Foot Span Lidgerwood Aerial Dumping Cable Way.

FLOUR MILL MACHINERY.

Two No. 1 scalpers, one No. 6 Cyclone dust collector, one No. 1 centrifugal flour dressing machine, one Diamond flour feeder, one packer for barrels or bags, one piece of wire cloth 100' long, new; 100' of 12" and 30' of 9" screw conveyor.

WOOD-WORKING MACHINERY.

24" planer and matcher, 7" four-sided moulding machine, two 8" stickers, tennon machine, sash and door tennon machine, one self-feeding panel raiser, one single spindle shaper, one foot-power mitre machine, jig saws, wood turning lathes, speed lathes, mandrils, with stands, emery wheel stands, one power grindstone.

Locomotives, Steam Shovels, Rock Crushers, Steam, Gas and Gasoline Engines, Boilers, Etc., Etc.

HOISTS ARE OUR SPECIALTY.

One 11x18" double cylinder, double drum; 8½x10" double cylinder and four drums for hoisting and swinging derricks; one 7½x10" new, double cylinder, double drum, with boiler; two 6½x10" double cylinder, double drum, with boiler; one 5x8" double cylinder, double drum; one 8½x10" double cylinder, double drum, new; one 8½x10" double cylinder, double drum, four spools erectors' engine; three 7x10" double cylinder, double drum, new; 7x10" double cylinder, double drum, with boiler; 7x10" double cylinder, double drum; two 6¼x8" double cylinder, double drum; 8¼x10" double cylinder, single drum; 8¼x10" single cylinder, single drum, with boiler; 6x12" single cylinder, single drum, with boiler. CARLIN MACHINERY & SUPPLY CO., Lacock and Sandusky Sts., Allegheny, Pa.

BARGAINS IN

Second-Hand Machinery

LATHES.

12 & 20' triple-geared pit lathe.
96x14' Wilmarth, triple-geared.
46-64x30 double.
60x20 Wilmarth, triple-geared.
49½x14' Fitchburg, C. R.
37x23' Betts, plain rest.
30x22 Pond, C. R.
23x10 Draper, C. R.
30x22 New Haven, plain rest.
30x10 Draper, C. R.
27x8 Draper, C. R.
26x22 Netts shafting.
26x10 New Haven, C. R.
24x19 Betts, double rest.
24x10 Draper, C. R.
20x16 Putnam, R. & F. rest.
20x10 Harrington, C. R.
20x9 Pond Mach. Tool Co.'s plain rest.
20x8 Putnam, R. & F. rest.
19x11 Lodge & Davis, C. R. and taper.
18x8 Perkins, plain rest.
17x8 P. & W., R. & F. rest.
16x8 Harrington, R. & F. rest.
16x6 Fifield, R. & F.
15x6 Reed, plain rest.
15x6 Prentice Bros., R. & F. rest.
14x8 Fitchburg, plain rest and chuck.
14x6 Fitchburg, R. & F. rest.
13x6 Ames, with turret.
26" Stevens pulley.
22x7 Lodge & Davis turret chucking.
24x8 Gray chucking.

Also good assorted stock of speed and turret lathes.

PLANERS.

61x64x22' Hepworth. 42x42x16 Bement.
27x32x8 Fitchburg. 26x26x6 Gleason.
24x24x8 Pratt & Whitney.
24x24x6 Flather.
22x22x5 Honesdale.
20x20x4 Lathe & Morse.
18x18x4 Gould.
12x8x30" bench on table.

MISCELLANEOUS.

20' hydraulic bending rolls.
8' 6" power bending rolls.
200-lb. Champion belt power hammer.
200-ton hydraulic press.
No. 23 B. & S. plain miller.
28" Smith & Mills shaper.
24" Hendy friction shaper.
2 15" Putnam friction shapers.
Beaman & Smith heavy vert. miller.
Upright drills 20 to 40".
Nos. 0, 1, 2 and 2½ P. & W. screw machines.

Also a large stock of other tools. Send for complete list.

PRENTISS TOOL & SUPPLY COMPANY,
115 Liberty St., New York, N. Y.
Buffalo Office, Block 36, Machinery Hall, Pan-American Exposition.
Boston Office, 200 Franklin St.
Pittsburg Office, 120 First Ave.

Second-Hand MACHINERY

For Immediate Delivery.

1-24" Double Surfacer, J. A. Fay & Co.
1-20" Single " " " " "
1- 8" Hand Jointer.
1-60" Triple Drum Sander.
1-36" Rowley & Hermance Band Saw.
1-38" Band Saw, No. 2, J. A. Fay & Co.
1-42" Fay Resawing Band Saw.
1-Fay Automatic Railway Cut-off Saw.
1-5'x9' Sash and Door Clamp.
1-Pulley Mortiser.
1-Wheel and Hub Boring Machine, No. 3, Fay.
1-2 Spindle Shaper.
1-Combination Saw Table and Dado Machine.
1-20" x 3" Springfield Water Tool Grinder.
1-Warner & Swasey Cutter and Reamer Grinder.
1-4 Spindle Drill.
1-Rock Drill and Tripod.
1-Portable Air Compressor, Hunt.
1-½" Screw Slotting Machine.
1 Vertical Wire Testing Machine, 4000 pounds capacity.
1-Bicycle Rim Drill.

U. Baird Machinery Co.

123-125 Water Street,
PITTSBURG, PA.

FOR SALE.

Five hundred pieces of Second-hand Iron and Woodworking Machinery, Engines, Boilers, etc. Send for list.

L. F. SEYFERT'S SONS,
437, 439, 441 N. Third St. PHILADELPHIA PA.

FOR SALE.

We carry a large line of Engines, both new and second-hand, in stock—cross-compound Corliss, tandem-compound Corliss and simple Corliss from 1500 H. P. down to 75 H. P.

Automatic Engines, every size and make—slide and piston-valve Engines from 1000 H. P. down to 5 H. P.

BOILERS—Water tube, horizontal tubular, locomotive Boilers, etc.

HEATERS—Open and closed heaters, all sizes and makes.

MACHINE TOOLS—Lathes, planers, shapers, drill presses, chucks, emery wheels, power punches, etc.

BLOWERS, Exhaust fans, shafting, pulleys, hangers, valves, governors, belting and pipe.

PUMPS—All sizes and makes from 3,000,000 gallons down.

CONDENSERS—Deane, Nordberg, etc.

ELECTRICAL MACHINERY.

1 600-light Edison incandescent dynamo.
2 400-light Edison incandescent dynamos.
1 60-light Thomson-Houston incandescent dynamo.
1 65-light Brush arc.
1 60-light Wood arc.
1 50-light Thomson-Houston incandescent dynamo.
1 30-light Brush dynamo.

ROLLING-MILL MACHINERY.

One 18" muck mill, one 18" sheet-bar mill, one squeezer, iron and wooden jib cranes, traveling cranes, rotary shears, hydraulic pumps, floor-plate, buggies, etc.

STEAM HAMMERS.

4000, 1200, 700 and 400 pounds double-legged Morgan.
275 pounds single-legged Kline.

ICE AND REFRIGERATING PLANT.

One pair of Pictet horizontal Ice Machines, consisting of two Corliss Engines, 16"x36", and ammonia Compressor, 10"x36" (ammonia end being new and manufactured by the Vilter Manufacturing Co., Milwaukee, Wis.); capacity of each machine 25 tons ice or 50 tons refrigerating.

The above is a very fine machine, thoroughly overhauled, and has just been sold to us by a Pittsburg firm, who replaced it with a machine of much larger capacity. Price $4500 f. o. b. Pittsburg.

PUMPS—FOR WATER-WORKS.

One Worthington Duplex 25x20x25, rods 3½" diameter, displaces 32,000 gallons per stroke, 110 strokes per minute. Total capacity over 5,000,000 gallons in twenty-four hours. Weight about 40,000 pounds.

This pump is as good as new and has been taken out of our city water-works, being replaced by one of much larger capacity.

One Gaskill Compound Pump, 16" L. P. cylinder, 22" H. P. cylinder, 18" stroke, 10½" fluid cylinder, suction 14", discharge 12", 125 pounds pressure. Used but five months.

Two Gordon Compound Pumps, non-condensing duplex, inside plunger, H. P. steam cylinder 12" diameter, L. P. cylinder 20" diameter, 11" water, stroke 18". Capacity of each engine 1,250,000 gallons per twenty-four hours, the suction being equal to not more than 20" vertically, and forcing into a reservoir stand-pipe or mains against a pressure of 110 pounds, at a piston speed not to exceed 100 feet per minute, with a steam pressure of 90 pounds.

Accompanying these engines are all the necessary attachments to connect to the suction and discharge pipe inside the pump-house; also the following: One vacuum gauge, one steam gauge, one combination water-pressure gauge, one eight-day clock. All the above mounted on black walnut board. All the necessary valves on suction and discharge and steam pipe.

Engines have copper air chambers, and are lagged with black walnut lagging.

The above is a new outfit never erected and cost $8000. We will sell same very low.

1 18"x12"x20" Cameron single Pump.
1 20"x6"x24" Wilson & Snyder duplex.
1 18½"x10¼"x10" Worthington compound.

And 100 smaller sizes, duplex and single.

SPECIAL PUMP.

One Silsby Fire Engine, 1000 gallons per minute, nearly new. Will be sold cheap. Can supply photograph.

Send for our April stock-list, which gives full particulars of what we have. We cannot advertise one-hundredth part of it.

MACHINERY BOUGHT AND SOLD.

WICKES BROS.

45th St. and A. V. R. R.
PITTSBURG, PA.

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One pair of 20x60 Harris-Corliss Engines, $3000.
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Three 60x20' 8" Hor. Tubular Boilers, 76-3¼" tubes, insurable 125 lbs., $400 each.
127'-40" 12 ply Giant Brand Revere Belt.
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direct connection sets with vertical engines. Perfectly new.

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One 60,000 lb. Traveling Crane, 52' span. Also 40 Flat Cars, 40,000 capacity each.

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1 3-sided Planer and Matcher, Frank, $175. 1 38" Connell & Dengler Circular Re-saw, $1.25. 1 42" 3-roll Egan Sander, $400. 1 30" Single Drum Sander, $45. 2 20" Pony Planers, each, $65. 1 24" Single Surfacer, $100. 4 Engines. 2 Boilers. Write for complete list.

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DEALER IN
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Second-hand Corliss Engines,

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Electrical Machinery
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2	150	Buckeye "C"	14¾x16	240	72x15
4	150	Westingh'se	13&22x13	290	
1	125	"	11&19x11	300	
2	75	"	12x11	300	
1	75	N. Y. Safety	12x12	300	
1	65	Russell Aut.	10x14	275	
1	50	Atlas "B"	10x12	300	
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BARGAINS IN

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375. 13x12 Ball automatic.
60 13x34 Putnam basin bed auto. engine.
75 20x30 slide valve.
76. 18x28 Nicol-Burr.
1044. 16x28 slide valve.
132. 16x24 slide valve.
137. 6 8x12 center crank Tifft engines.
138. 6 9x12 center crank Tifft engines.
148. 12x20x12 Westinghouse engine.
163. Cross compound Armington & Sims, 13½x20¼x15.
173. 13x34 Fitchburg engine.
192. 1 New York Safety auto. 11x12.
193. 12x12 Armington & Sims automatic.
206. 14x24 slide valve.
210. 11x10 Westinghouse.
2 3. 12x24 slide valve.
217. 15x16 Ball automatic.
219. 11x20x14 McEwen tandem comp.
220. 11x9x11 Westinghouse engine. 13x22x 3.
222. 14x24x14 Westinghouse engine.
223. 23x36 Wright-Corliss engine.
226. 9x8 Westinghouse.
235. 20x40 Nordburg.
297 8¼x10 Taylor-Beck automatic.
299. 1 pair Williams auto. engines, 500 H. P.
750. 5x4 Westinghouse, Jr.
846 1 6x7 vertical automatic.
851. 1 7x7 horizontal automatic.
0x9. 18x30x16 Westinghouse.
047. 22x60 Harris-Corliss.
0x10. 16x36 Hoffman & Billings Corliss.
a1. 10x14 center crank, slide valve.
a2. 10x15 center crank, slide valve.
a3. 11x16 center crank, slide valve.
a4 11x14 center crank, Atlas.
a5. 9x12 center crank, Erie City.
a6. 18x24 side crank, Atlas.

No. **GASOLINE ENGINES.**

154. 2 50 H. P. Otto gas or gasoline.

No. **HOISTING ENGINES.**

810. 10x16 double drum, double cylinder Mundy hoisting engine.
755. 11x18 double drum, double cylinder Mundy hoisting engine.
753. 8¼x12 double cylinder, single drum hoisting engine.
377. Locomotive boiler with hoisting rig attached.
108. 8x12 Webster, Camp & Lane double cylinder, single drum.
6x10 single cylinder vertical engine and boiler.
55. 8x12 single cylinder hoisting engine and boiler.
77. 5x7 elevator hoisting engine, double cylinder, with worm gear.
33. 1 elevator hoisting engine, 7x10, double cylinder.
174. 8x12 double cylinder hoisting engine, belt driven.

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812. 1 30-light arc dynamo.
813. 1 45-light arc dynamo.
814. 1 50 K. W. Westinghouse alternator.
816. 1 50-light arc dynamo.
818. 1 electric elevator hoist with dynamo, on one base, complete.
820. 1 60 K. W. Ft. Wayne alternator.

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666. 75 H. P. Heine safety boiler.
664. 48x12 tubular, no dome.
469. 4 54x15, no dome.
004. 175 H. P. Heine water tube.
005. 120 H. P. Sterling water tube.
006. 54x14, tubular.
675. 48x12 tubular, no dome.
676. 60x12 vertical fire box.
681. 66x12 vertical fire box.
686. 66x16 tubular.
688. 66x18 tubular.
695. 48x10 vertical fire box.
702. 48x10 vertical fire box.
704. 60x16, no dome, tubular.
708. 60x14 tubular.
711. Marine fire box, 15 H. P.
716. 4 72x20 tubular, no dome.
719. 100 H. P. internally fired.
580. 15 H. P. water-tube marine boiler.
580. 20 H. P. water tube marine boiler.
007. 1 80 H. P. locomotive fire-box boiler.
008. 1 100 H. P. locomotive fire-box boiler.
009. 50 vertical, from 2 to 20 H. P.
010. 20 locomotive fire-box boilers, from 10 to 40 H. P.
0x1. 200 H. P. internally fired marine.
0x2. 125 H. P. Locomotive fire box.
0x3. 150 H. P. Wicks horizontal safety water tube boiler equipped with a Murphy automatic stoker. Both boiler and furnace in excellent condition. Boiler has 86 4 inch tubes 18 feet long. Full information on application.

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201. Deep well pumps, 6x18, 10x36.
225. Worthington duplex compound, 8x12, 8½x10.
231. Worthington duplex compound, 10x16 10¼x10.
295. 5 hand power Diafra bilge pumps.
x 1. 4 centrifugal pumps, 16" suction, 12" discharge.
x 2. 24x12x24 Gordon duplex pump.
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366. 1 Knowles 7½x7x10 single acting pump.
895. 7½x5x10 single acting pump.
893. Deane single acting 7x6x8 pump, fly wheel type.
888. 1 Smith-Vaile 10x6x12 pump.
928. 1 vacuum pump, 6x10x12.
933. 1 Worthington single action 7x6x8 pump.
890. 1 Norwalk pump, 10x5¼x12.
882. 1 Norwalk pump, 12x7x16.
881. 1 Crane crank and fly wheel pump.
883. 1 Blake triplex, 8x6x9 pump.
930. 1 fire pump, 12x7x10.
934. 1 Worthington single acting 16x7x10 pump.
879. 1 Knowles single acting No. 5 pump, 7x4½x9.
924. 1 Worthington duplex pump, 9x5¼x10.
925. 1 Gordon duplex, 9x5¼x10.

No. **AIR COMPRESSORS.**

337. 1 straight line steam driven air compressor, made by National Drill & Compressor Co., 20x22x24.
890. 1 5¼x7x10 Norwalk air compressor.
896. Hall duplex air compressors, steam driven, 10x12x12, 6x8x8 and 8x10x10.
1 Hall duplex belt driven air compressor, 6x6.
902. 1 Hall duplex air compressor, 7x8x9.

No. **IRON WORKING TOOLS.**

3. 1 screw punch, hand power, punch holes ⅝ to 3-in.
16. 2 circular band saws, 8-in. blade.
68. 1 8-in. Fay re-saw.
100. 1 hydraulic tank riveter.
239. 2 iron planers, 18x18x5, 18x18x6.
1 double spindle drill press, Pratt & Whitney.
2. 1 horizontal automatic boring bar, will bore cylinder 24-in.
4. 18x18x4 iron planer.
128. 1 horizontal milling machine.
236. 1 iron planer, 34"x12 ft. long.
256. 1 iron planer, 20x20x4 ft.

No. **MISCELLANEOUS.**

8. 1 hand lever gap shear.
15. 1 hand power sidewalk elevator hoist.
19. 2 Raymond ore crushers and pulverizers.
33. 24-in. Jones turbine water wheel.
35. 30-in. " " "
59. 1 hand fire engine on wheels.
70. 2 wire straighteners.
321. 1 Hotchkiss belt driven hammer.
330. Buffalo jet condenser—200 h. p.
843. 78 5-in. fire plugs.
294. 1 Wells light.
301. 1 small Wells light.
326. 1 ¾ in. Worthington water meter, also a 3 in. meter.
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365. Hot blast apparatus with direct connected fan and engine.
378. 1 Gates stone crusher.
756. 1 Niagara power shear—4½-ft. knife.
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841. 1 hydraulic press.
635. 1 power rattler.
834. 1 Rogers locomotive.
No. 9 cupola blower.
351. 1 Buffalo blower, No. O, direct connected water motor.
052. 100 steam traps, from 4 to 12-in. diam.
844. 5-ton locomotive traveling crane.
7 4. 10-ton locomotive traveling crane.
0x3. Bullock champion prospecting dynamo, core drill, complete.
0x4. Tank 78"x50 ft.
0x5. 12 iron columns 50 ft. long x 18" diameter made of channels.

ICE MACHINES.

15-ton Murray, 30-ton refrigeration.
40-ton DeLaverne.
35-ton Allis.
50-ton Boyle.
25-ton Lindy.

ROOFING GLASS.

50,000 ft. ribbed and rough new roofing glass, 18 to 50 inches wide.

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030. 2000 ft. of 1⅛-in. wire cable.
031. 500 ft. of 2¼-in. cable.
032. 1000 ft. of 2¼-in. cable.
033. 1000 ft. of 1¼-in. galvanized guy rope.
594. Fly wheel, solid rim, 10-in. diam., 10-in. bore, rim 9-in. face.
500,000 ft. of standard black wrought iron pipe, from ⅜ to 12-in. diam.
5 carloads of steel sheets, from 8 to 16 gauge.
All kinds of plumbing material, including bath tubs, lavatories, sinks and closets.
We carry a complete stock of hardware, including such items as horseshoes, horseshoe nails, hammers, hatchets, axes, handles, &c. Also just received 5 carloads of wire nails.

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STRUCTURAL IRON WORK
For Immediate Delivery.

EYE BEAMS, from 3 in. to 20 in.
CHANNELS, from 1¾ in. to 15 in.
ANGLES, 1 in. to 6 in.
FLATS & BARS up to 20 in. wide.
ROOF TRUSSES, GIRDERS, COLUMNS, and **BRIDGES** designed and built.

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1 Fairbanks Gasoline Engine (30 horse power). This engine is new and complete in every particular, including a 40-gallon galvanized tank, 1 box batteries, fixtures, piping, belting, and an extra 525-gallon galvanized gasoline tank. Will sell at a great bargain. 1 Steam Fire Engine, late from Baltimore department. 4 Hoisting Engines, 12, 15, 18 and 25-horse power respectively. A number of single and duplex Steam Pumps. Cistern, Deck and Deep Well Pumps (new). General machine work and repairing. I make a specialty of repairing Steam Pumps, High-speed and Gasoline Engines.

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No. 3 DECK SCOW 100'x29'x9'8"
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FLOATING PILE DRIVERS
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2 OSGOOD DREDGES

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60-lb. STEEL T

RAILS

Located in the South. Also sell new light-weight Rails, and buy old Rails.

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Rebuilt & Guaranteed. Immediate Delivery.

1 pair (twin) 20"x42" Green-Corliss Engines. 1 16¾"-32"x36" Cross Compound Fitchburg. 2 20"x42" right hand Green Automatics. 1 14"-27"x14" Westinghouse Compound. 1 22"x32" Watertown Automatic. 1 13"-20"x16" McEwen Compound. 3 15½"x15" Armington & Sims. 2 14½"x15" Beck Automatics. 1 15"x14" Ideal. 1 13"x14" Fitchburg Vertical Automatic. 2 12"x18" Russell. 1 10"-18"x12" Ball Tandem Compound. 2 80 H. P. Westinghouse Compounds. 3 75 H. P. Westinghouse Standard Automatics. 2 65 H. P. Westinghouse Compounds Also a great many others, all types. Send for special list.

BOILERS.—12 Water Tube Boilers, 165 to 200 lbs. steam pressure. 28 Hor. Tubular Boilers.

Several full Railway and Electric Lighting Equipments. Large stock of Machine Tools. Also a large assortment of New Machinery, for immediate delivery—Lathes, Planers, Shapers, Drill Presses, Milling Machines, Dynamos, Motors, Gas and Gasoline Engines, Steam and Centrifugal Pumps. Contractors' and General Supplies.

Write for special catalogue and prices.

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ENGINES and BOILERS FOR SALE.

Prices Low. Quality High.

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8x20—20 H. P. Plain Slide Valve.
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27, 30, 35, 40, 50, 65, 70, 75, 80 H. P. Hor. Tubular.
3 125 H. P. Hor. Tubulars, each 72"x16'x4".
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16 and 60 H. P., Locomotive Type.
Large assortment Wood-workers Machinery.
Write for List "B" of New and Second-hand Machinery.

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For Sale—Dynamos, Engines, Boilers, &c.

DYNAMOS—Brand new, modern and guaranteed for one year, 110 volt, compound wound, self oiling—6-lt. $36; 14-lt. $56.25; 27-lt. $67.50; 40-lt. $90; 53-lt. $112.50; 67-lt. $135; 93-lt. $146.25; 105-lt. $ 61.25; 130-lt. $183 75; 200-lt. $206.25; 270-lt. $228.75. MOTORS—110 volt, brand new, guaranteed for one year—¼ horse $28 50; ½ horse $36; 1 horse $56.25; 1½ horse $60; 2 horse $67.50; 3 horse $90; 4 horse $112.50; 5 horse $135; 7 horse $146.25; also larger ones. Special prices on 220 and 500 volt motors. Second-hand dynamos, in first-class condition—700-lt. dynamo $325; 130-lt. $135; also smaller ones. **Alternating Current**—2 1300-lt. Westinghouse alternators, $385 each. **Engines**—50 h. p. $300; 100 h. p. $475; 125 h. p. $650; 150 h. p. $750; 250 and 350 h. p. engines; also larger and smaller at low prices. **Boilers**—2 90 h. p. $260 each; also larger and smaller boilers. **Feed-Water Heaters**—Berryman, about 700 h. p., $175, and smaller ones. **Generators**—100 K.W., 500 volt. $675, and larger and smaller ones. Pulleys, Shafting, Belting, &c. Write us for what you want.

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CLOSE TO RAILWAY, AT GOLD HILL, N. C.

60 Head 750 lb. Stamp Mill, Self Feeders, Plates, 3 Rock Crushers, etc. 100 H. P. Corliss Engine. 40 H. P. Erie City Engine. Three 60 H. P. Erie City Boilers, Air Compressor, Receiver, 2 Drills, etc. 3 Head Pony Stamp Mill with Engine, Boiler and Plate, complete. 5 Head 650 lb Stamp Mill, Self Feeder, Triumph Concentrator. Thies Chlorination Plant, 2 barrels, lead lined tanks, etc. Buildings, Bricks, Tools, Shafting, Pumps, Assay outfit, etc. F. BLOOMER, Agent, Gold Hill, N. C. F. BETTS, Los Angeles, Cal.

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2nd-Hand 80, 160 and 250 h. p. Berrymans, 200 h.p. Goubert, 150 and 600 h.p. Wainwrights, 500 h.p. National, 600 h.p. Stillwell-Bierce Open Heater. All guaranteed. F. L. PATTERSON, Havemeyer Bld'g, N. Y.

Engines, Boilers, Pumps, Hoisting Engines, Lathes, Planers, Drill-Presses.

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NEW AND SECOND-HAND
MACHINERY
of all kinds. BIRMINGHAN, ALA.

2D-HAND BERRYMAN HEATERS, all sizes. Taken in trade for our Improved Berryman. In perfect order. Tested and guaranteed. Prices reasonable. BENJ. F. KELLEY & SON, Makers, 91 Liberty St., N. Y.

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100 h. p. 12x24 Buckeye Automatic.
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250 h. p. 12x22x18 Payne Tandem Cpd. Auto.
65 h. p. 12x24 Cooper Slide Valve.
50 h. p. 12x18 Slide Valve.
14x7x10 Smith-Vaile Fire Pump.
200 h. p. Baragwanath Heater.
45 h. p. 11½x18 Slide Valve.
60x16 ft. Tubular Boiler.
200 h. p. Stillwell-Bierce Heater.

The above are all in first-class condition and ready for shipment.

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1 1000-ft., 1¼-in. Sherman Cableway, with Lambert engine, complete.
Stiff Leg, Guy and Breast Derricks, hand and steam power.
Traveling Derrick, Byer's.
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Horizontal Boiler, 40 H. P.
"New Ingersoll" Drills E 9, new and second-hand.
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Pipe Fitting and Machine Shop Outfit.
Plows, Shovels, Small Tools, etc.

Machinery located at Trenton Falls, N. Y.; Rome, N. Y., and Wyoming, Ill.

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Can Ice Making Machinery,

INSTALLED BY

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(60 Ton Daily Capacity)

complete with 2 Compound Compressors, 30 ton each. Distilling Tanks, Receivers, Boilers, all Piping, Dynamo and Engine for Electric Lighting and Driving Travelling Cranes for handling cans. About 1500 cans, used 2 years, and can be bought right, either to be used on premises or removed. For full particulars, address,

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Tanks, Steam Pumps, Boilers, Engines and Frictionless Babbitt Metal, for sale. Machinery of all Kinds manufactured.

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New Ober Manufacturing Company's No. 10 Automatic Wood Lathe. Just the machine for turning Hoe Handles and Broom Handles. Lathe was only used several weeks. No need for it now. Will sell for $200.00, cost $275.00.

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Iron Tools and Woodworking Machinery

Corliss and Double Valve Engines for Trolley Roads and Electric Lighting Stations.

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Lot of Boilers, Engines, Lathes, Planers, Drill-Presses, 1 Large Fire Pump, Steam Pipe, all sizes, and about 500 Tanks of different sizes.

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2 Van Dusen Gasoline, 25 h. p. each. 1 10 h. p. Otto Gas Engine. All in good condition and cheap. The J. H. DAY CO.,
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FOR SALE.—One 75 ton Western Ice Machine. Reference, Asheville Ice Co., Salisbury, N. C. Inquire THE CHATTANOOGA BREWING CO. Chattanooga, Tenn.

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Second-Hand **Boilers, Engines and Pumps.**

17 Standard Tubular Boilers, ranging from 50 to 150 H. P., single and in batteries.
14 Engines, ranging from 10 to 700 H. P., Corliss Automatic and Slide Valve.
8 Steam Pumps, compound and duplex.
Large assortment of Generators, Wood-working Machinery, etc.

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125-127 W. Water Street, Milwaukee, Wis.

John A. Waters & Co.
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New and Second-Hand Boilers, Engines, Mining Outfits and General Machinery.

3 100 H. P. Return Tubular Boilers, made by the Penn. Boiler Works (new, never having been in brick work) with stack and breeching complete.
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1 4x6 Double Cylinder and Single Drum **Hoisting Engine,** as good as new, only used a few weeks. Both of these Hoisting Engines have been thoroughly overhauled in our plant.

Steam Engines and Boilers
FOR SALE.

One Brown Engine, 18x42; one Erie Ball, 13x12; one 15x14 Straight Line, with 1600-lt. ht generator connected; one Westinghouse, 25 H. P., with 250-light connected with belt; one Compound McIntosh & Seymour, 250 H. P. connected, with two generators 2000-light each, vertical; one Shaving Press for baling shavings.

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YOUR CHANCE.

FOR SALE, second-hand, one J. A. Fay & Egan Co.'s New Band Short Log Saw Mill and Edger. Also one Baldwin, Tuthill & Bolton's Automatic Band Saw Sharpeners and Tools for same.

These machines in first-class condition. Write for full particulars.

Address **TOOLS,** care Mfrs. Record.

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Wood and Iron Working Machinery,

New and Second-hand.

If in the market for machinery, send for our descriptive price list.

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FOR SALE. Band Saw, Scroll Saw, 7" and 14" Floorers, Circular Re-Saw. K. B. Surfacers, Stationary Bed Planers. Planers and Matchers Du Four Picket Header, Shapers, Moulders, Aut Knife Grinder, "Daig" S Tube Aut. Nailer, Blind Slat Tenoner, Blind Stile Mortiser and Borer, Knife Balance, Swing Saw, Lathes, Shaving Fans. Cash buyers for new or re manufactured wood-working machinery, can save money by writing to

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Five-Ton Complete ICE-MAKING PLANT
FOR SALE,

Consisting of Geo. F. Blake Mfg. Co. Steam Driven Ammonia Compression Machine, complete with Condenser, Coils, Brine Tank, Pumps, Ice Cans, Boiler, Stack and all paraphernalia to make a complete plant, at bargain price to quick buyer. Write for general machinery bargains.

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FOR SALE.—Engine 13"x24," $300; 12" x16", $200. Traction Engines 10 and 12 Horse, $300 each; 10 and 12 Horse Portables on wheels, $175 each. Engine Lathe 20" swing, $125. 18" swing 10' Bed Engine Lathe, $100. Pratt & Whitney Drill Presses, $15 each. Five Boilers 56"x18'. 20 Flues 6" dia., $300 each. Upright Boilers, Engines, Hoisting Engines—all sizes. 20, 30, 35-Horse Portable Boilers with Engines to match. Engines, Boilers, Iron and Wood-Working Machinery of every description at buyers' prices. D. L. CASEY MCH. CO., Springfield, Ohio.

FOR SALE.

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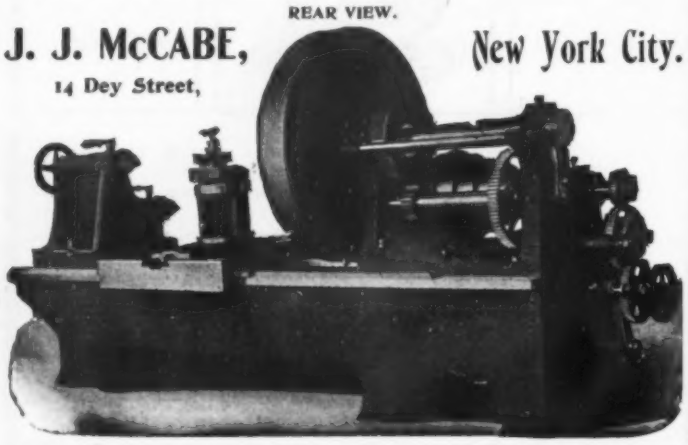

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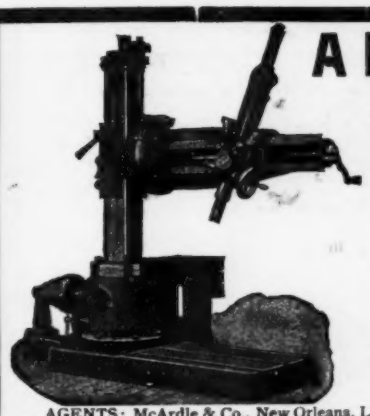

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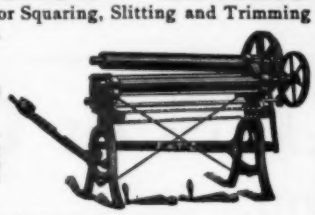

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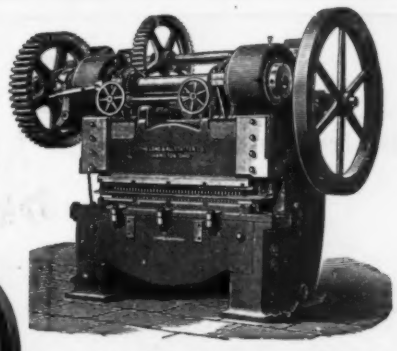

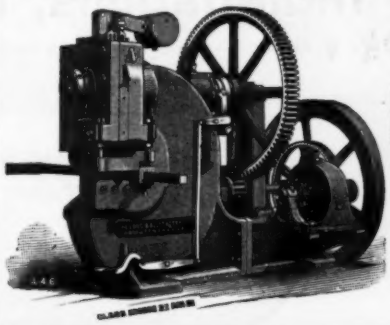

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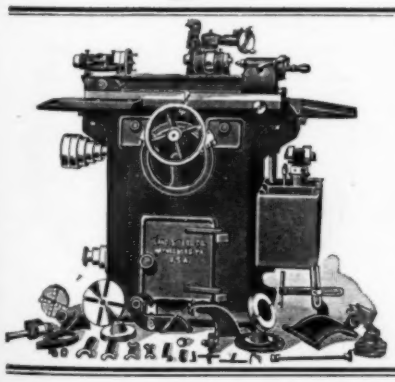

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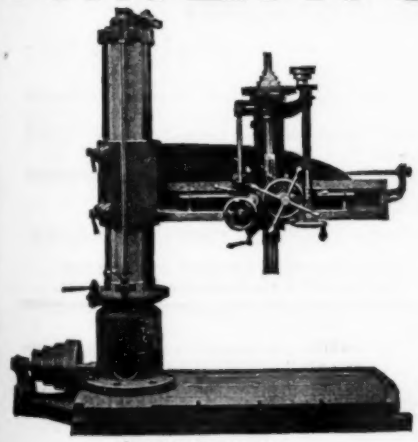

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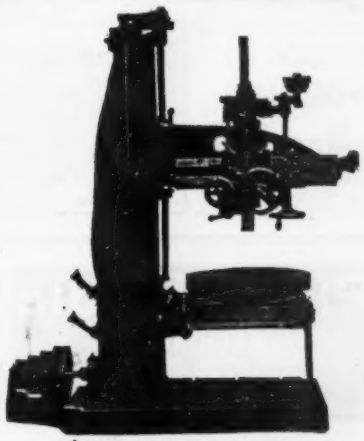

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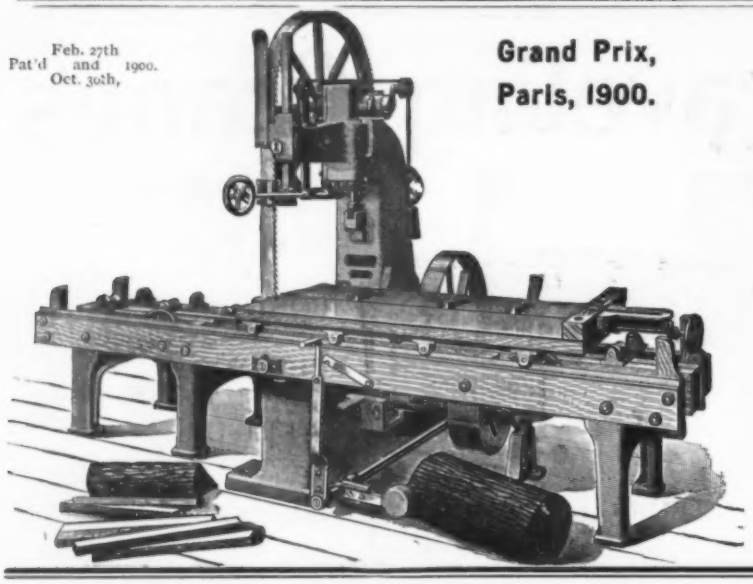

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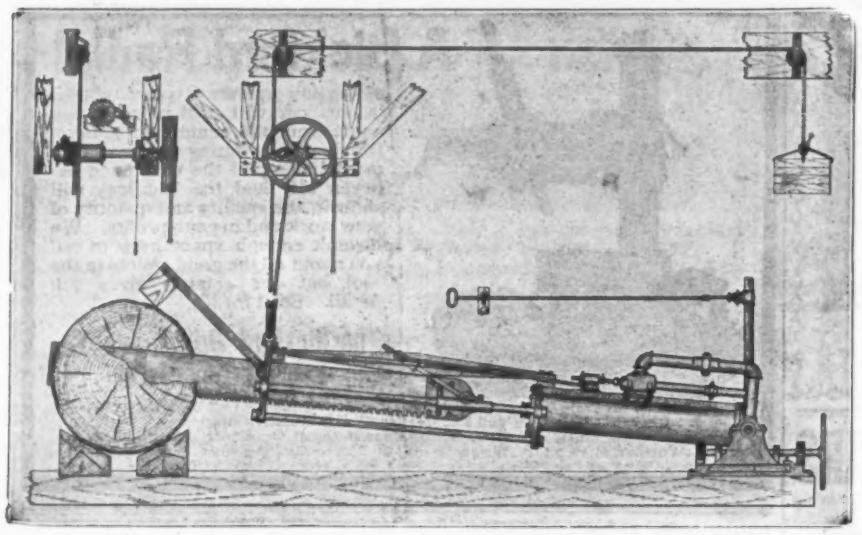

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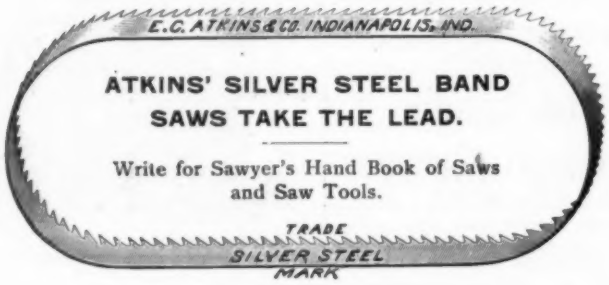

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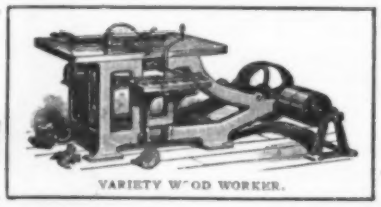

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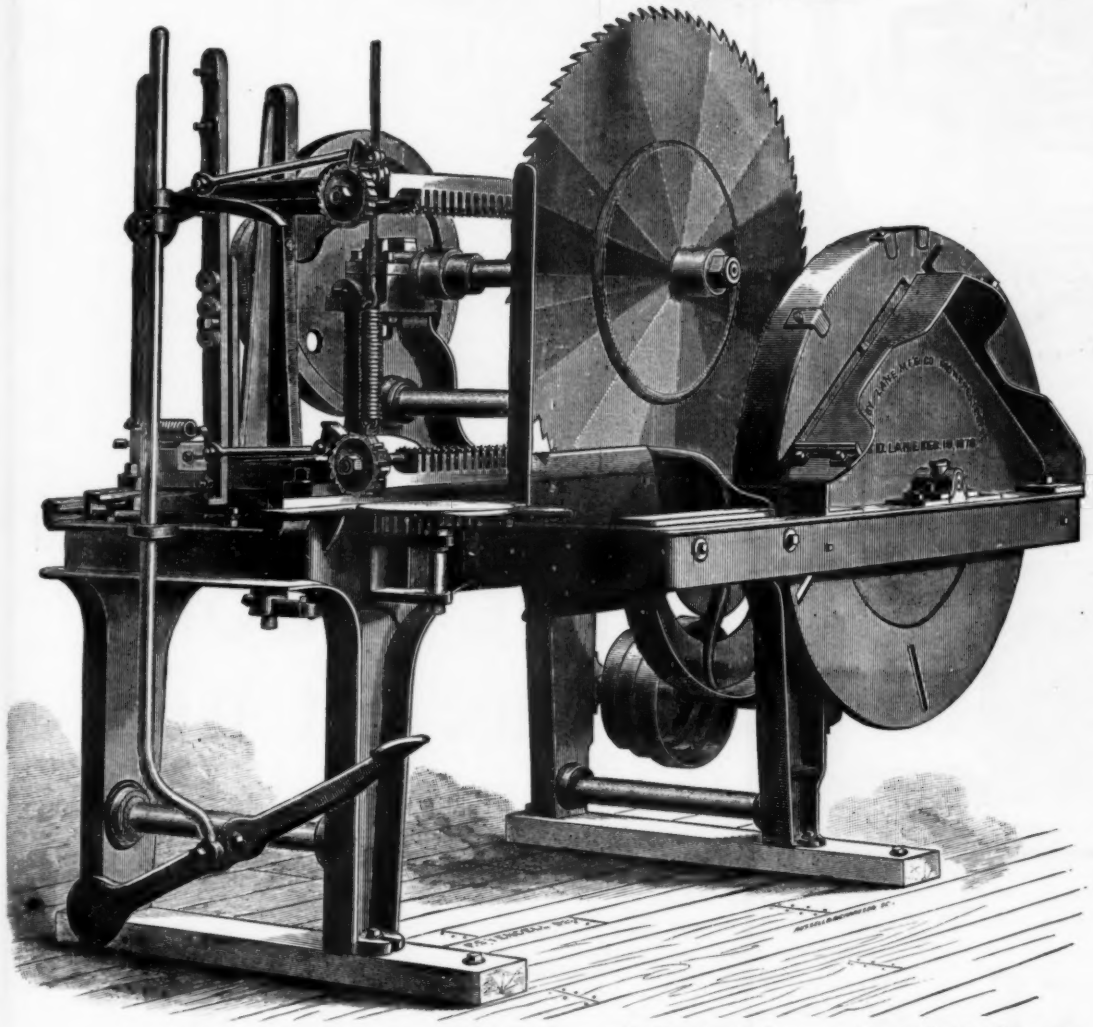

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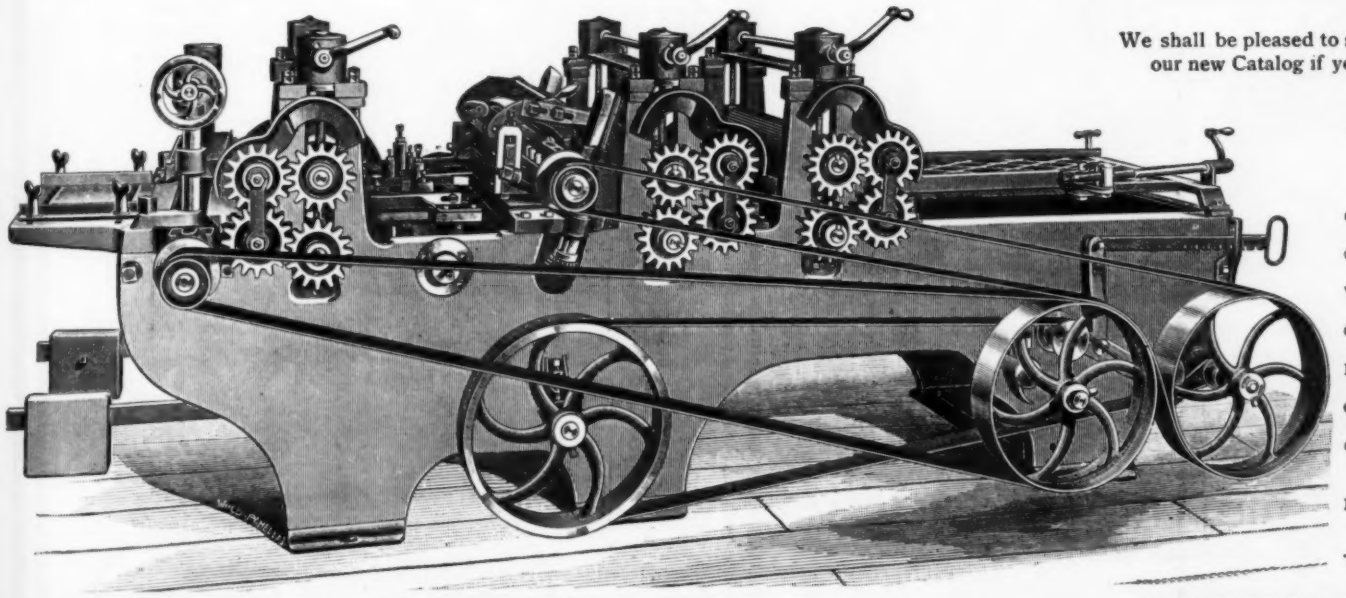

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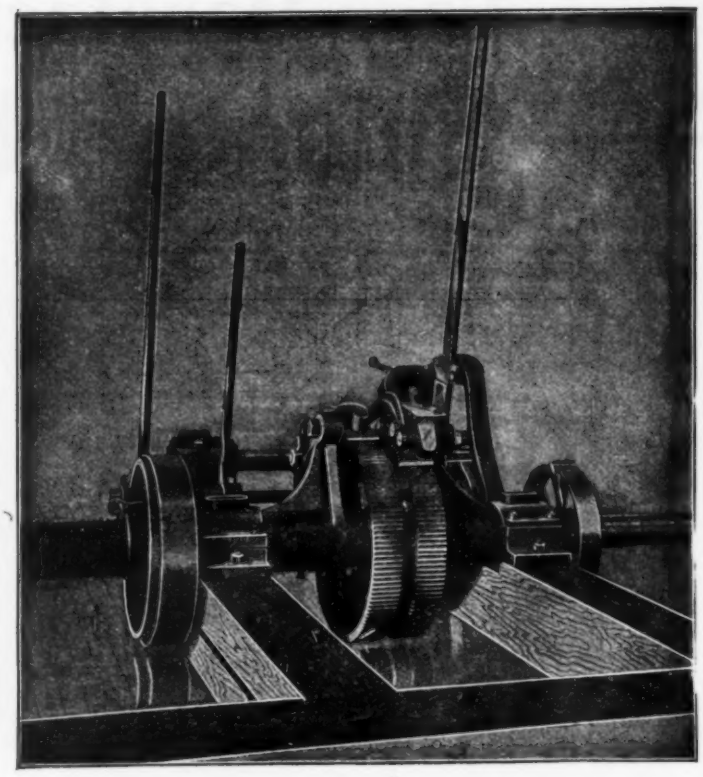

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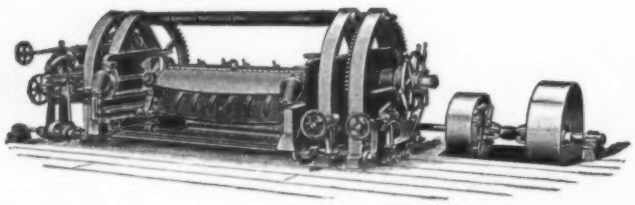

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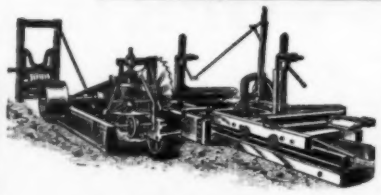

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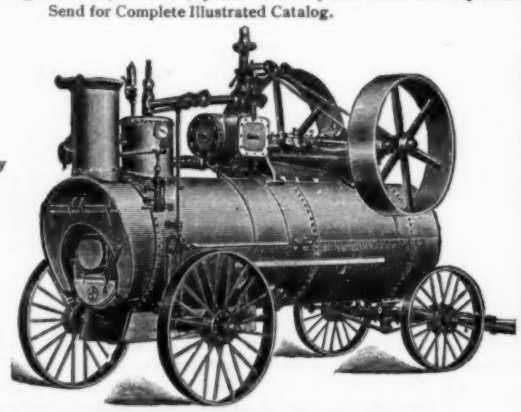

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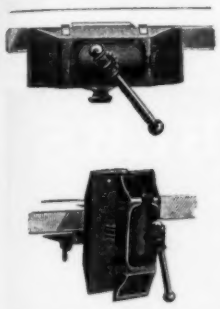

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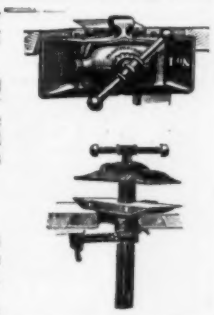

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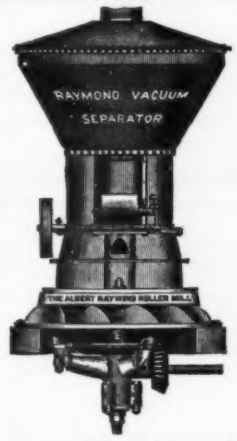

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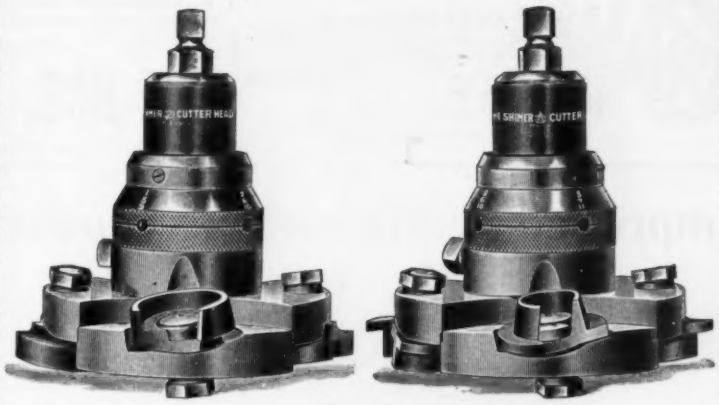

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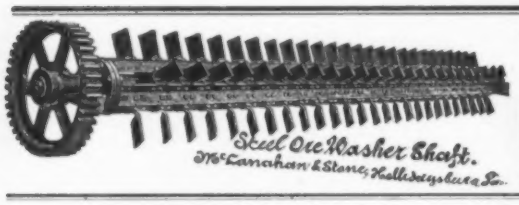

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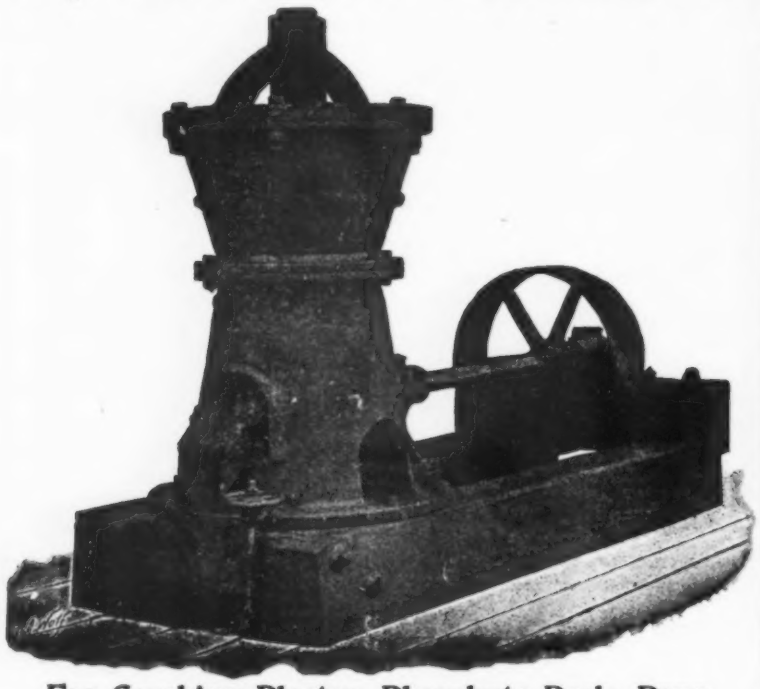

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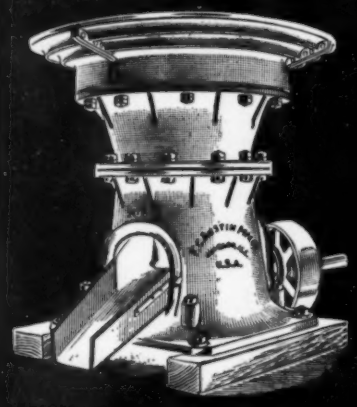

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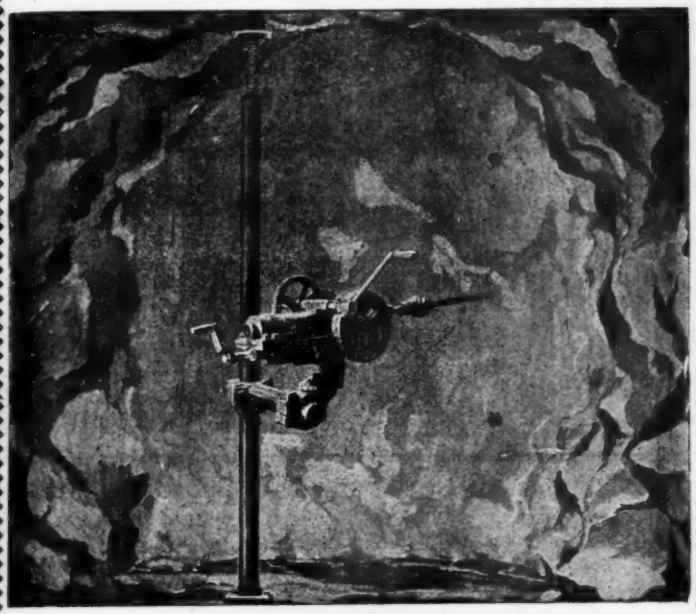

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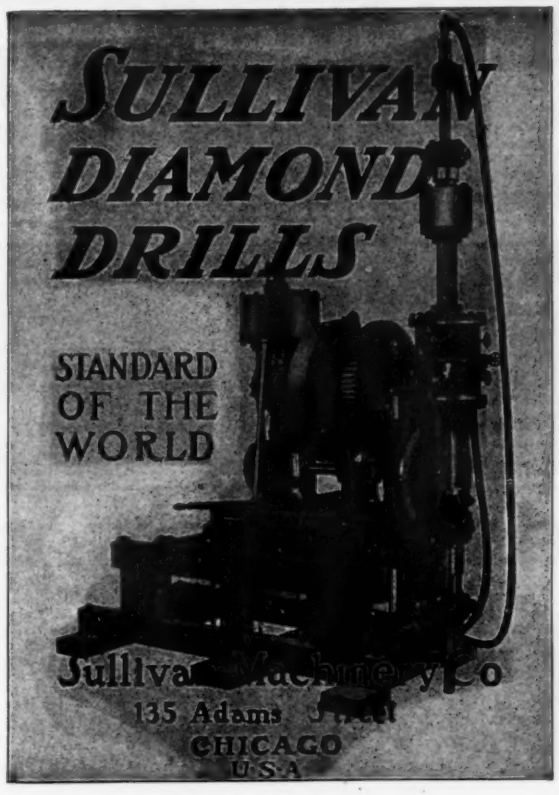

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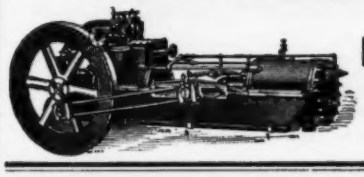

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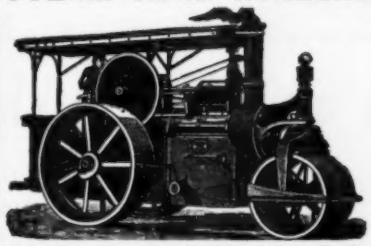

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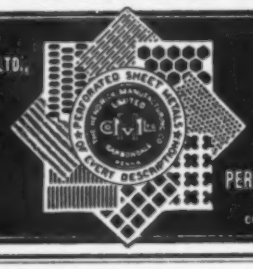

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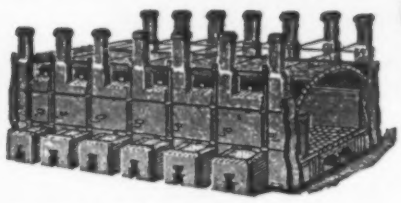

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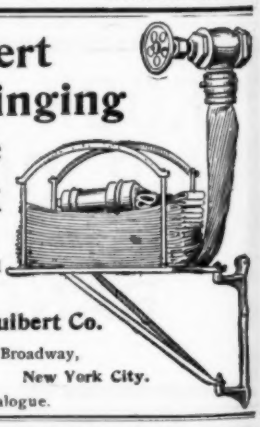

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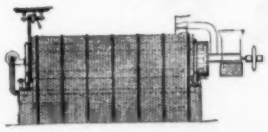

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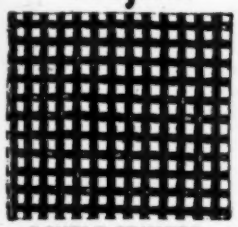

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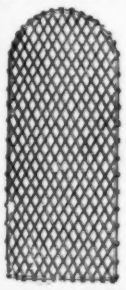

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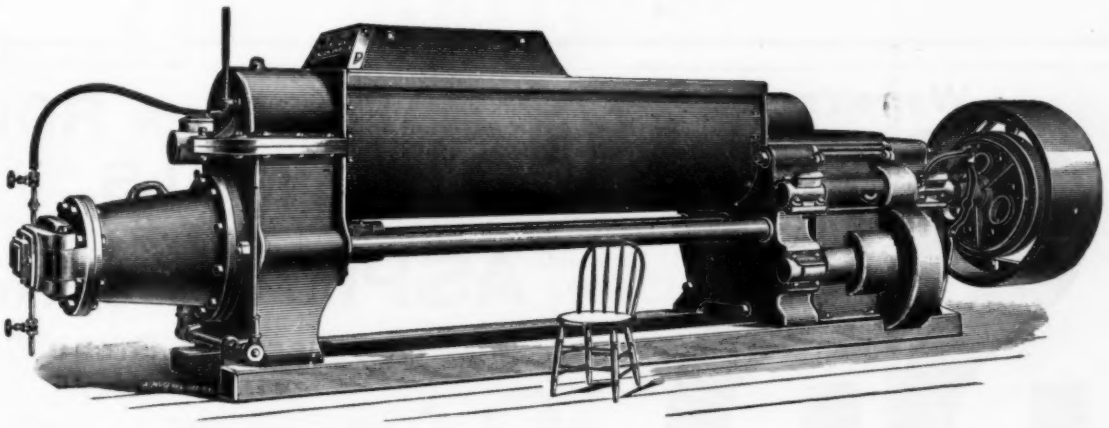

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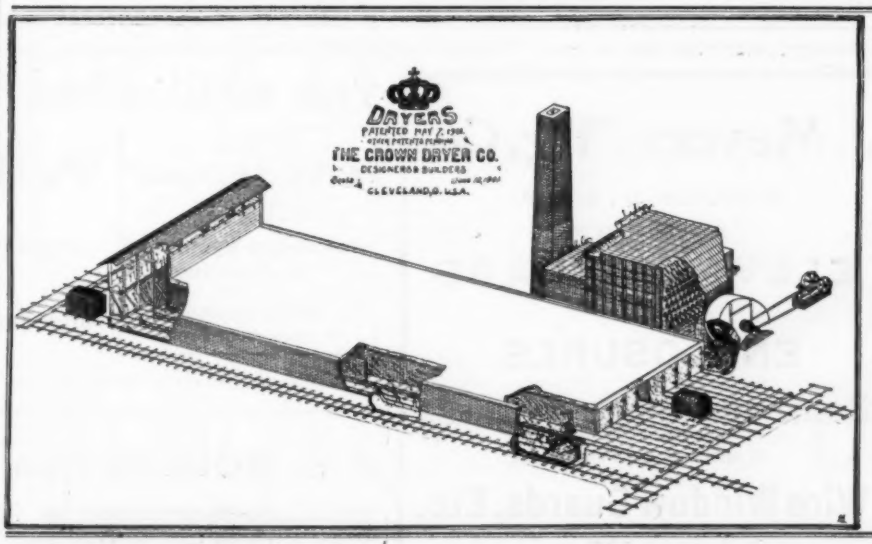

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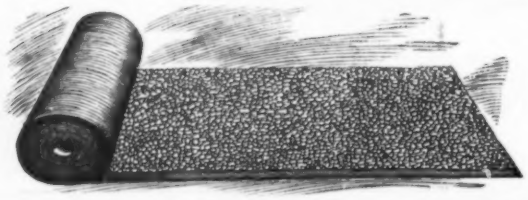

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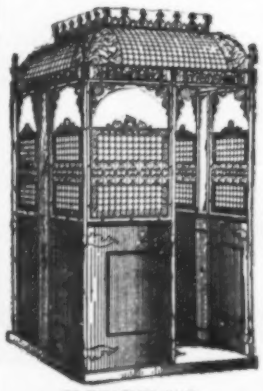

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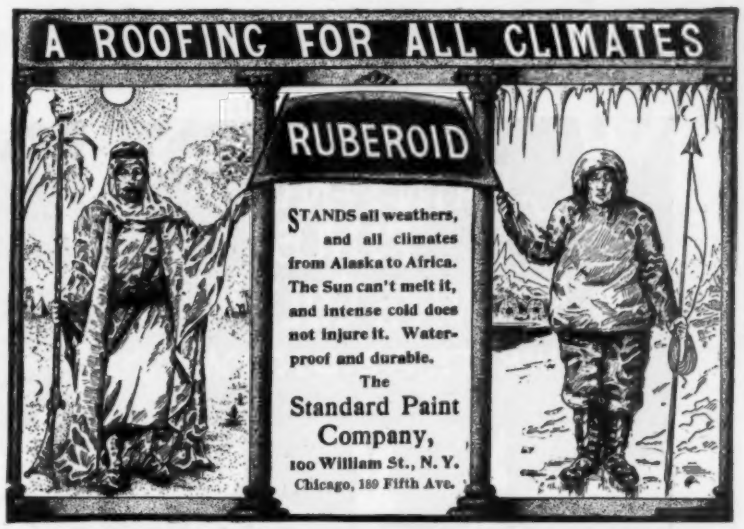

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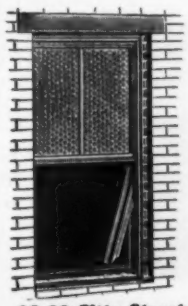

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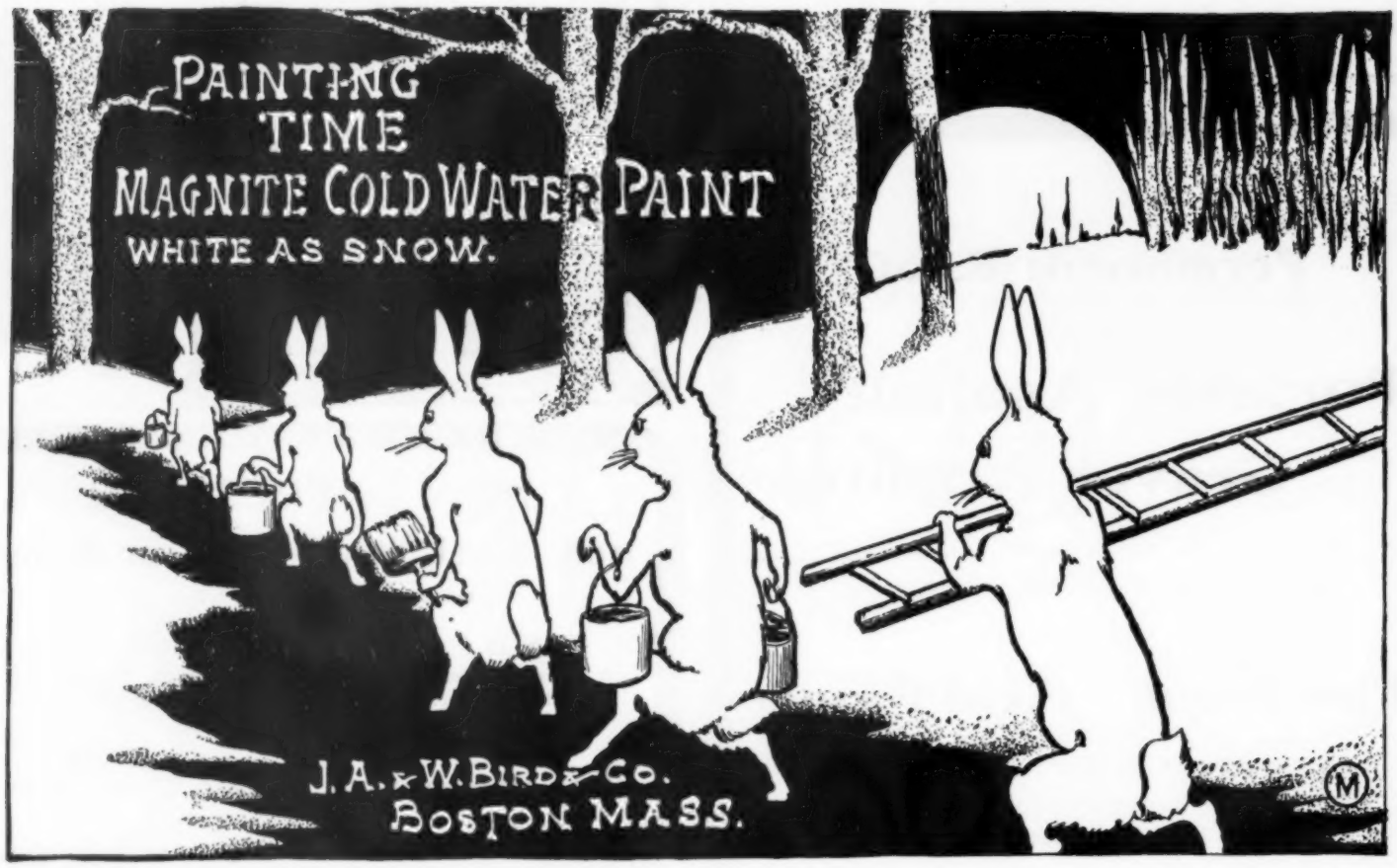

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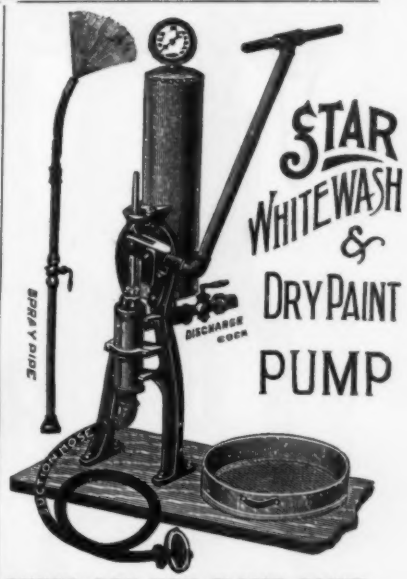
SPECIALTIES.—2 and 3-ply Roofing, Insulating, Building and Sheathing Papers, Asphaltum, Pitch, Roof Paints, etc.



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THE STAR BRASS WORKS,
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Send for Circulars and Prices.

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Octagon Shingle.

We Guarantee Our Octagon Shingle

to be absolutely water-proof; to last double the time the same metal would put in the old way, and to be one of the best roofing coverings made. In use on more buildings than any other metal shingle. See our Catalogue E—thoroughly explanatory.

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TEXTILE MACHINERY.

Plans Made and Factories Completely Equipped with Driving and Machinery.

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Foundry, Machine and Millright Work.

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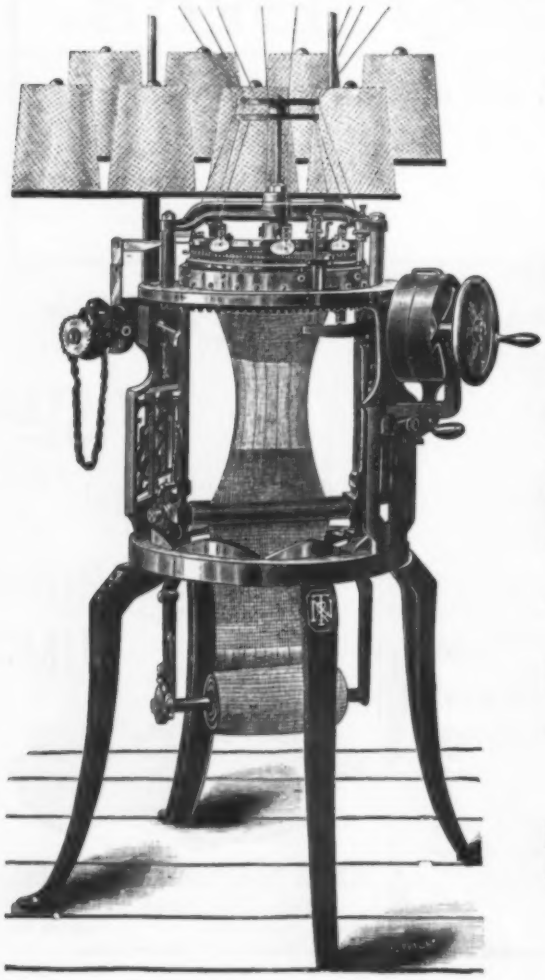

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Circular Knitting Machinery

Plain and Automatic.

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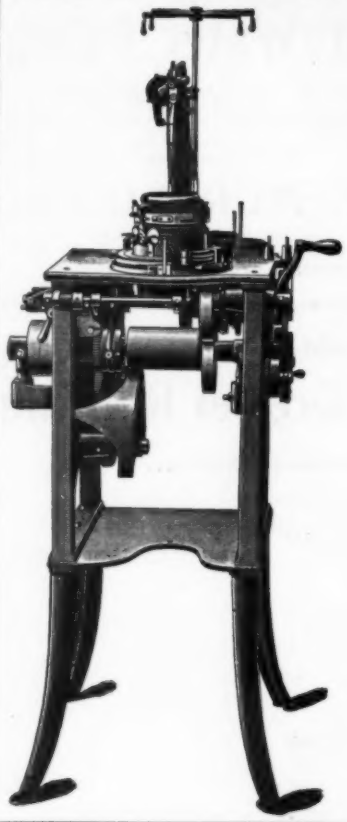
THE ACME AUTOMATIC KNITTER!



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Seamless Hosiery.

Has all the Latest Attachments and Improvements.

Is used by the most prominent mills in the South and elsewhere.

We also manufacture LATCH NEEDLES of superior quality for all makes of machine.

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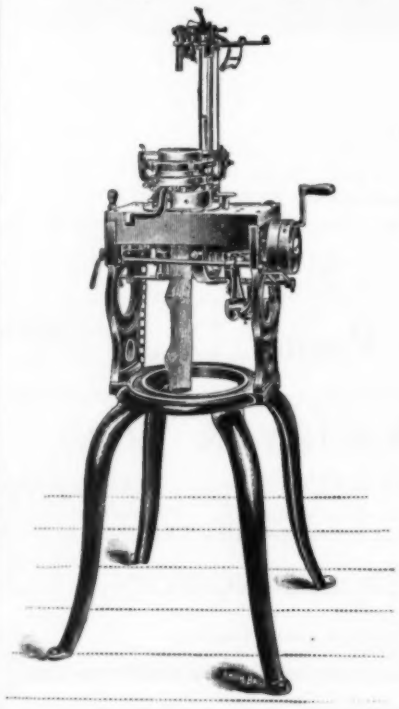

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Half-Hose,

Footing Ribbed or Plain Hose Legs.

Transfering by use of Point Rings.

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Everything needed for the Complete Equipment of COTTON MILLS to Manufacture
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BEST { MATERIAL / WORKMANSHIP / RESULTS

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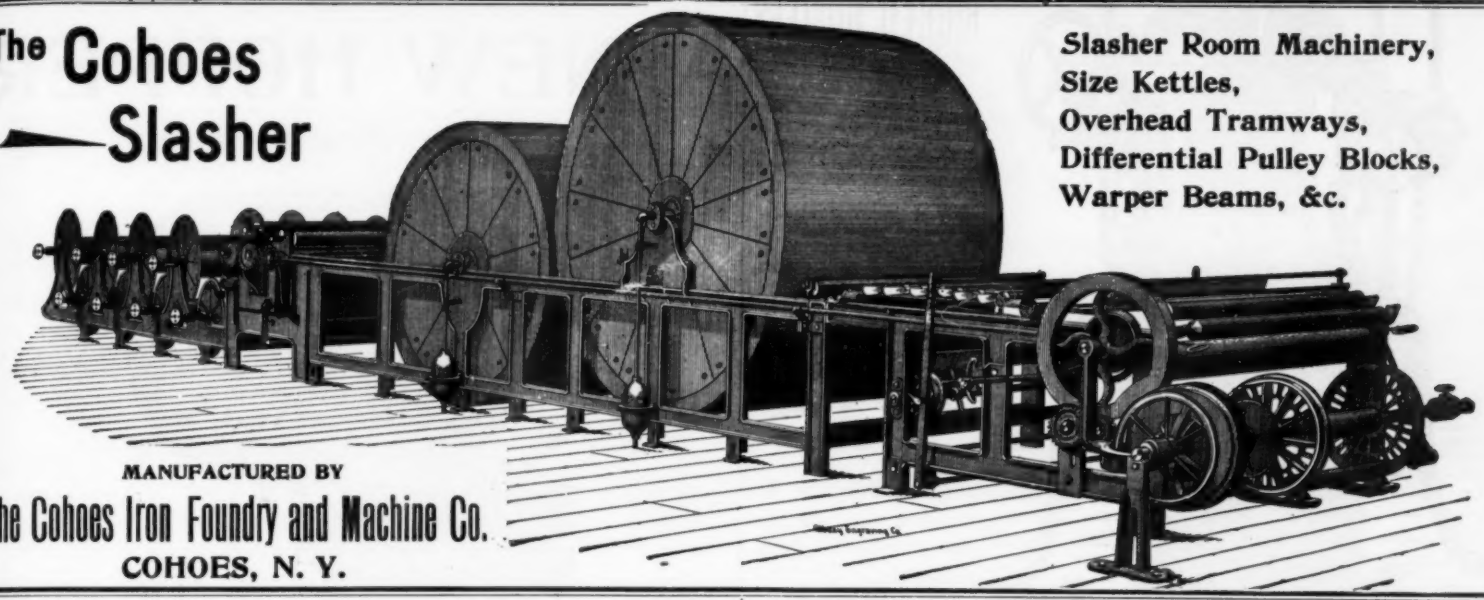

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MANUFACTURED BY

The Cohoes Iron Foundry and Machine Co.

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Build You A Cotton Mill!

This is our advice to Southern towns in the cotton region Assume that your receipts are now ten thousand bales: 10,000 bales sold as raw cotton at 6c., $300,000—10,000 bales sold as cloth at 18c., $900,000. If the cloth should be sent to China (much cloth from the South is now being sent there), then the Chinese would pay and send to your town $900,000 for what now brings you $300,000. This would give a profit of $600,000 to your town and its neighboring people. This profit is twice the price of the raw cotton.

This profit or additional income from abroad goes in part to the stockholders and in part to the operatives, from whom in turn it goes to neighboring farmers for food stuffs and to merchants for clothes and groceries.

We design and construct cotton mills complete.

MASON MACHINE WORKS,

Cotton Mill Machinery,

The D. A. Tompkins Co., Agents, Charlotte, N. C.

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ESTABLISHED, 1873.

WHITINSVILLE SPINNING RING CO.

Our Patented Specialties.
Double Ribbed Rings, U.S.
Standard Traveler Cleaners,
Metallic Burnish Like
That Produced by
The Traveler.

WHITINSVILLE, MASS. U.S.A.

KILBURN, LINCOLN & CO.

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LOOMS

FOR

Plain and Fancy Weaving.

Our "High Speed Loom" is the result of over fifty years of development and improvement.

We are represented in the South by

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THE CAMPBELL & CLUTE MACHINE CO.

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FLAT CUFF MACHINES. Single Stitch, Double Stitch and Patent Two-Thread Loopers.

YARN WINDERS. Burrs and Wheels of all kinds. Burr Blades, Sinkers, Etc.

Advertise in the Manufacturers' Record.

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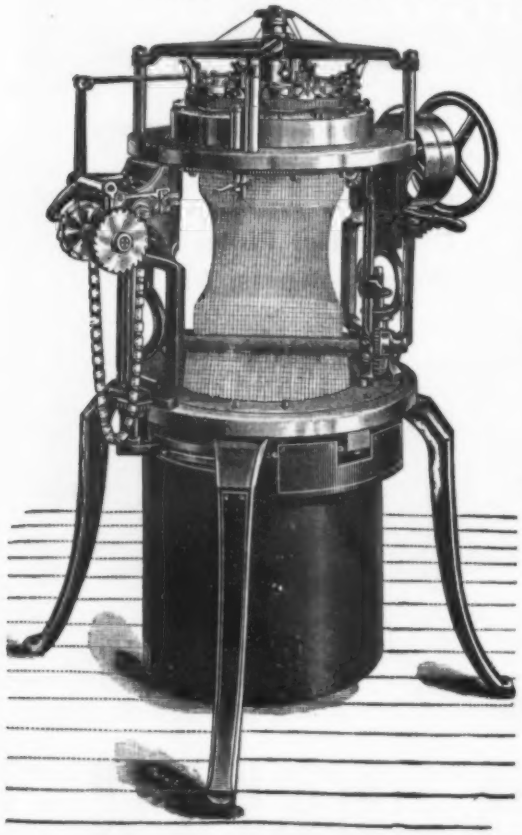
AUTOMATIC AND PLAIN.



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ESTABLISHED REPUTATION FOR

Largest Production, Best Quality Fabric, Durabilty, Economy of Operation.

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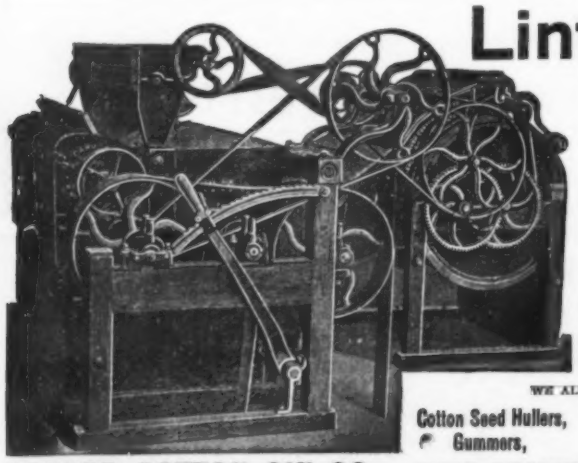

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Patent Automatic Feeder.
Adjustable Seed Board.
Adjustable Friction Drive for Float.
New Method Drive.
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Whole Saw Wood, Whole Saw Iron Cylinder.

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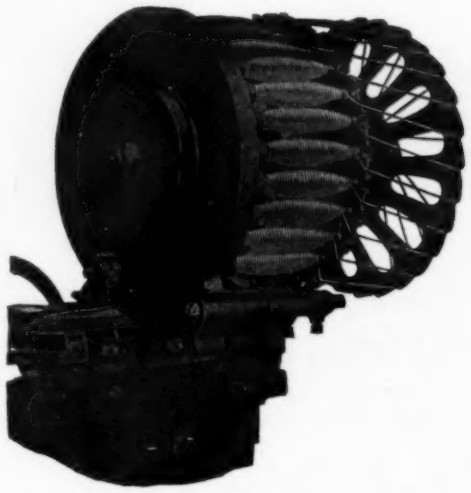
Plans and Estimates Furnished on Application. Correspondence Solicited.

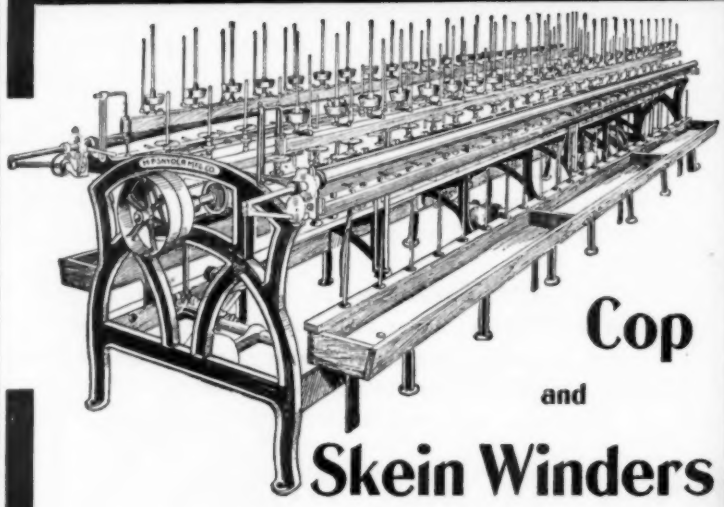
A NEW HOPPER

For The New Century.



The Hopper makes the Loom. Note the Size and the Simplicity.

THE DRAPER CO., Hopedale, Mass.



Cop and Skein Winders

built upon the most improved plans, with bearings and spindle points hardened and ground. These

Winding Machines

are capable of transfering from Cop or Cone to the largest bobbin more yarn to the spindle than any other similar machine now on the market. Made with any number of spindles desired, above 24. We should like to send full information. Write us.

H. P. Snyder Mfg. Co., Little Falls, N. Y.

We make and solicit your orders for

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feeling sure of the ability of our machines to satisfy.

Samples and Details Upon Application.

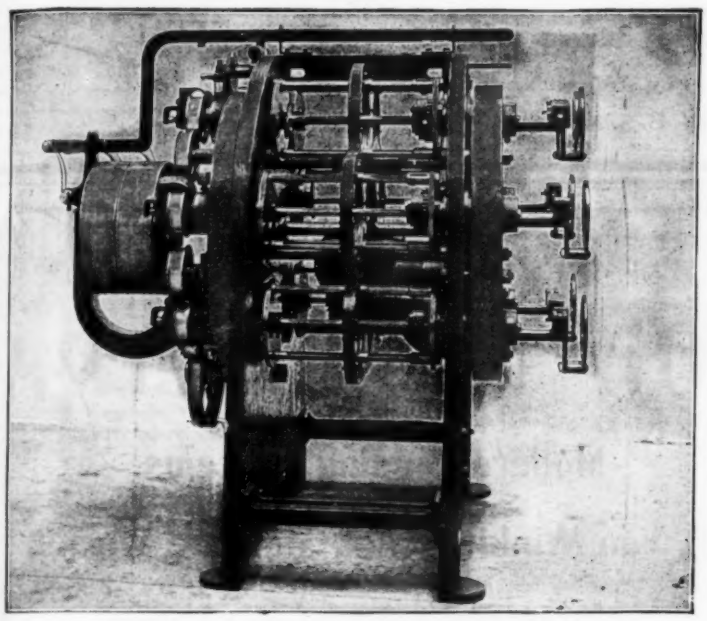
The Haskell-Dawes Machine Co.

Manufacturers of

Forming, Twisting and Laying Machinery.

We Build The Best Types Of

Modern, High-Speed, Geared Machines



Which are adapted for making all kinds of

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The Haskell-Dawes Machines are built upon a NEW PRINCIPLE, whereby the MOST POSITIVE RESULTS ARE SECURED. They occupy LESS SPACE than the ordinary type of machines, require LESS RELATIVE POWER, and will turn out a MUCH LARGER PRODUCT of Twine and Rope.

The SPECIAL ATTENTION of Cotton Manufacturers is called to our new FORMING AND ROPE LAYING MACHINES.

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Works: Frankford Junction, Philadelphia.

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MACHINERY AND EQUIPMENT
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Undoubtedly the Best.

Agencies to responsible parties.

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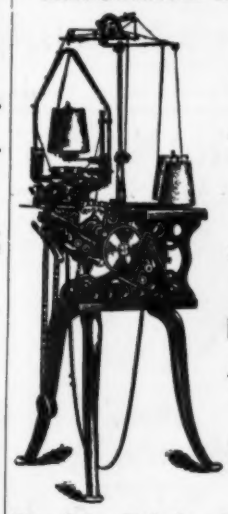

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Two-Feed 7/8 Auto. FOR LADIES' STRING WORK, ALSO BLACK LEGS with WHITE FEET.

Regular 7/8 Auto. FOR ALL CLASSES OF COTTON HOSE.

Special 3/4 Auto. FOR WOOL.

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Mercerizing Machinery for Skein and Warp.

Pressed Steel Automatic Tenter Clip. Winding, Measuring and Folding Machinery. Special Machinery to Order.

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The "JOHNSON" Sugar Filter Press,

Specially designed for Plantation Sugar Houses and Sugar Refineries.

Reduces the loss from fermentation and inversion to a minimum.
Insures an increased yield of Crystalizable Sugar.

Twenty-five years' practical experience enables us to build Filter Presses that are the Standard for Cotton Seed Oil, Sugar House, Abattoir Color and Paint, Varnish, Clay, Mining and all other Special Work.

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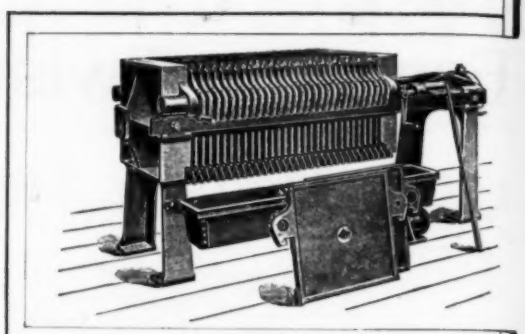

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Bagging Rice.

This Machine is Extensively Used Among the

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LABOR SAVING.

Capacity, 200 Bags Per Hour.

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Cottonseed Oil Machinery.

(Not in any Combination or Trust.)

Modern Ginning Systems.

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Local Oil Mills and Ginneries Combined.

Cotton Oil & Fibre Co.

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Producers of

Crude and Refined Cotton Seed Oil,

Cotton Seed Cake, Hulls, Mixed Hulls, Linters, Etc.

Prime Cotton Seed Meal "Cofco" Brand.

Samples Free On Request. Net 100 lbs. Fully Decorticated.

Guaranteed Analysis:

Ammonia	Not	Less	Than 8.50	Per Cent.
Nitrogen	"	"	" 7	"
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Crude Oil and Fat	"	"	9 to 10	"

SECOND-HAND
HYDRAULIC MACHINERY
FOR
Cotton Seed Oil Mills.
Address "AMERICAN,"
Monadnock Building, Chicago

CINCINNATI HAMILTON & DAYTON RY. CH&D CINCINNATI INDIANAPOLIS CHICAGO DAYTON TOLEDO DETROIT

GOOD SERVICE ASSURED when traveling via **C. H. & D.** BETWEEN

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Standard and Compartment Sleepers. Cafe Dining Cars.

D. G. EDWARDS, P. T. M., Cincinnati, O.

SAVOGRAN Cleans Wool, Mill Floors, Anything.
INDIA ALKALI WORKS, Boston.

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ALDIGE REFINERY

THE UNION OIL CO. UNION BUTTER OIL NEW ORLEANS, LA.

The American Cotton Oil Co.

MANUFACTURERS AND REFINERS.

COTTONSEED PRODUCTS....

Oil, Cake, Meal, Linters, Ashes, Hulls,

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Cable Address, AMCOTOIL, New York.

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THE AMERICAN COTTON OIL CO. PRIME IXL COOKING OIL NEW YORK

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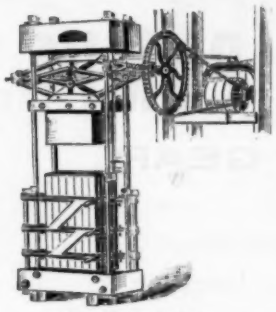
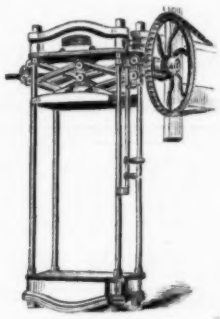
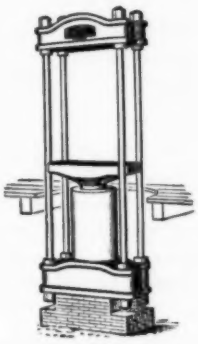


Knuckle-Joint Cloth-Baling Yarn and Press



Knuckle-Joint Cloth-Baling and Finishing Press.



Hydraulic Cloth-Baling and Finishing Press.

Manufactured by

G. H. BUSHNELL PRESS CO.

Thompsonville, Conn., U. S. A.

A QUIET TIP.

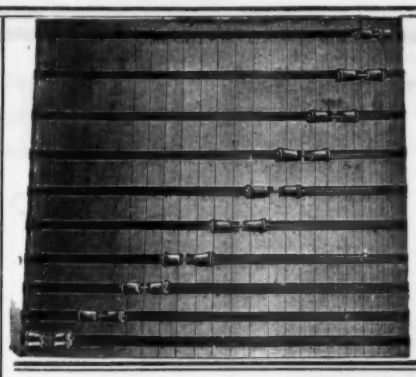
The following interesting letter, from P. J. Karbach & Sons, Omaha, addressed to the Wallace Supply Co., 56 Fifth Avenue, Chicago, Ill., may serve as a valuable "pointer" to many manufacturers who are slow to adopt new methods, dated:

"Omaha, Neb., Oct 3, 1901.

WALLACE SUPPLY CO.,
CHICAGO,

Your favor of recent date at hand and in reply say that we had a contract for 55 towers and had to bend the first 15 in the vice, before we received the bending machine. Our man worked nearly three days making all the angles for the 15 towers, the same work was done on your machine in a little over four hours and the man not half so fatigued as by the old way. The work was done by one man and it is our opinion that with the aid of a helper to heat the iron, it may be done in less time than above."

Write the WALLACE SUPPLY COMPANY, 607 Garden City Block, Chicago, Ill., and a-k for circular of Angle and Eye-Bending Tools.



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Louisiana Red Gulf Cypress.

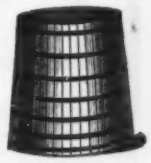
Admittedly the most durable wood known. Impervious to heat, acids or chemicals. Send for Illustrated Catalogue.

W. E. CALDWELL CO.

3300 Brook Street, LOUISVILLE, KY.

Cedar and Cypress Vats,

Tanks, Dye Tubs, &c.



and everything in the shape of a Tank.

Our new plant, covering over two acres of ground, is in complete running order, and can serve you to any extent and with promptness.

G. WOOLFORD WOOD TANK MFG. COMPANY,

OFFICE, REAL ESTATE TRUST BUILDING,
S. E. Cor. Broad and Chestnut Streets.

Works, Darby, Pa., P. W. & B. R. R. PHILADELPHIA.

STEEL

Watering Troughs

V-Shape, Triangle, Square or Round; ANYTHING YOU WANT.

Galvanized Iron Storage Tanks from 125 bbls. down to 3 bbls.

Let us know what you want and we will make it. Address

CLARENDON BOILER WORKS, N. CLARENDON, PA

(MENTION THIS PAPER.)

HARRY BROS. CO.,

Manufacturers Corrugated Galvanized Steel

Cisterns and Stock Tanks.

We manufacture Railroad Station Tanks, Tanks for Petroleum Oil Wells, Tanks for Factories and Mills, Garbage Barrels, etc.

TANKS FOR SUGAR HOUSES AND FUEL OIL.

Large Tanks for every purpose. Write for estimates on this class of work.

Harry's Corrugated Galvanized Steel Cistern.—Corrugated for strength; they are strong and durable. Easily shipped by rail or wagon. If you want a Cistern, you want the best; buy a Corrugated. No Leaks—No Wiggles—No Mosquitoes, in the Corrugated. They are equally good for overground and underground use. Our prices are reasonable; our work is guaranteed.

240 Pacific Avenue, Dallas, Texas.
231 Fannin St., Beaumont, Texas.

Harry Corrugated Tank Co., 311 Requena St., Los Angeles, Cal.

Cotton Seed Oil Mills . .

COMPLETE.

Various sizes, from the

Plantation Mill of 5 Tons

to the

Large City Mill of 150 Tons per day.

Our Mills have all the Latest Modern Improvements in Machinery, and produce the very best results. Also,

Hydraulic Cotton Presses, Threshers and Cleaners.

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RICHMOND, VA.

The Powhatan Clay Mfg. Co.,

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White, Buff, Speckled and Gray Front Bricks

In All Sizes and Shapes. FIRE BRICK

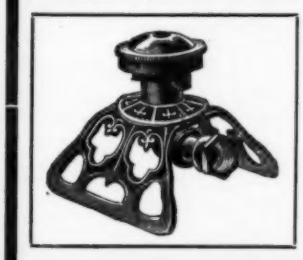
The Best, Safest and Cheapest Tanks are made of

CYPRESS

Made in every size and for every purpose. Tell us your tank troubles.

G. M. DAVIS & SON,

PALATKA, FLORIDA.



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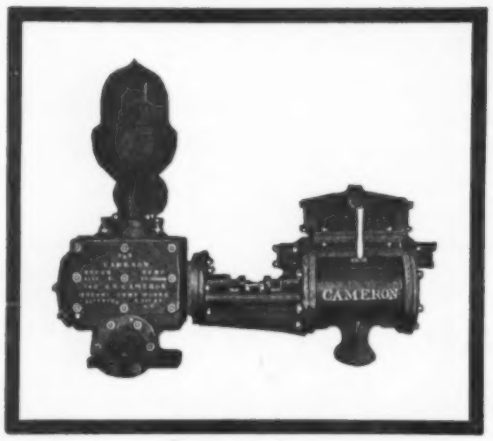

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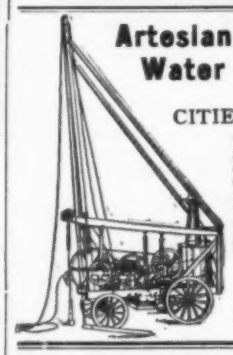

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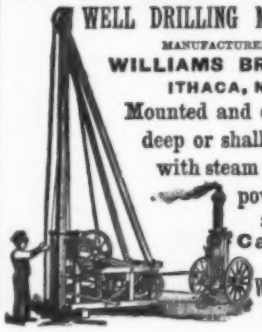

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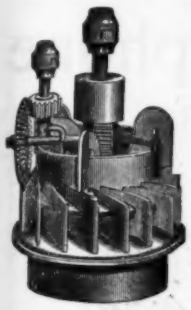

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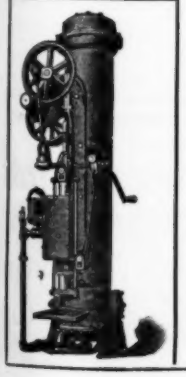

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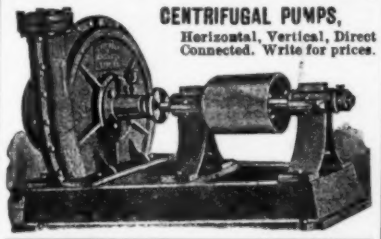

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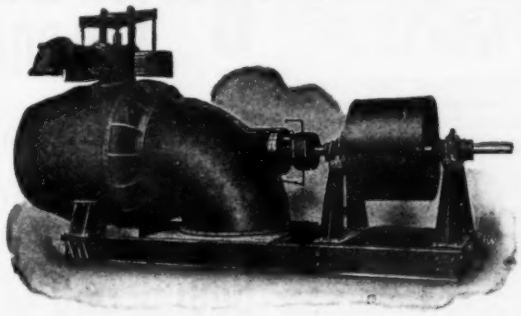

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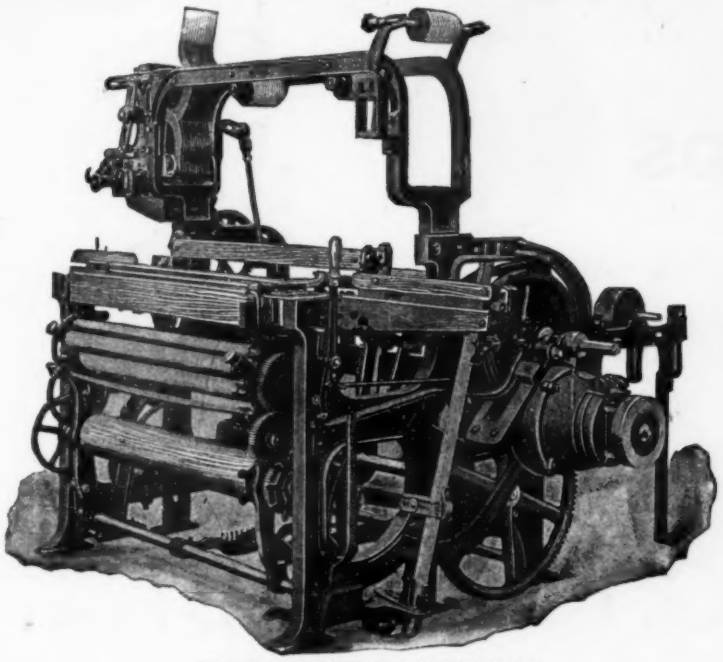

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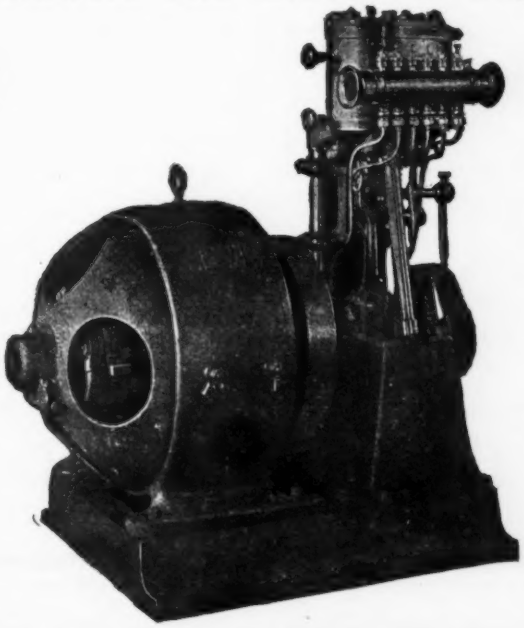

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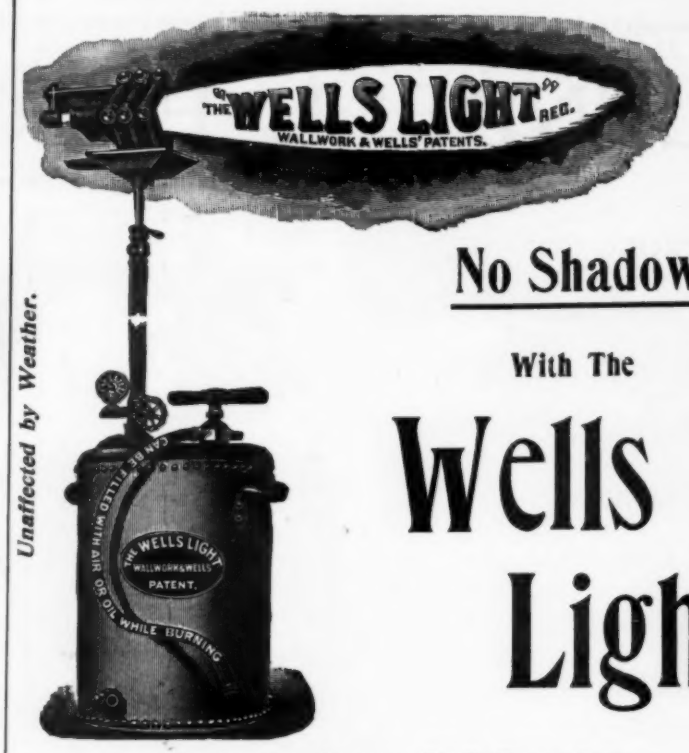

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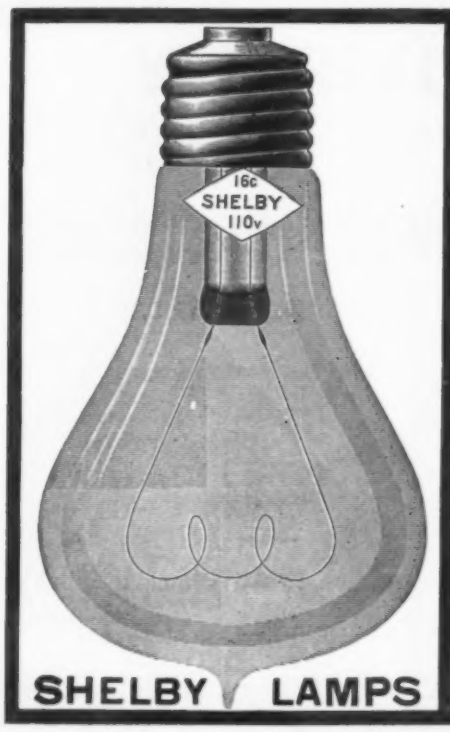

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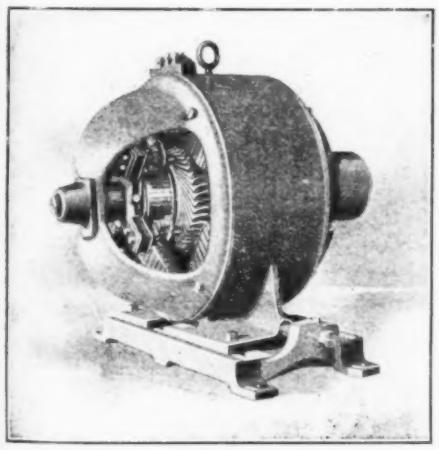

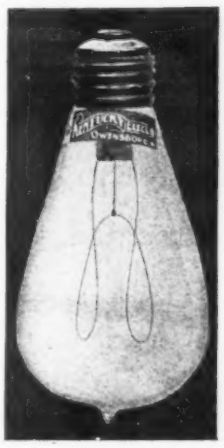

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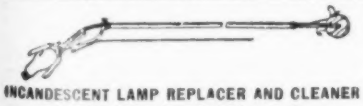

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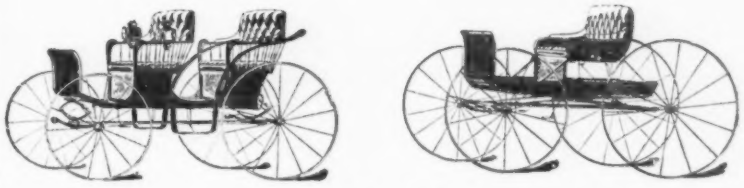

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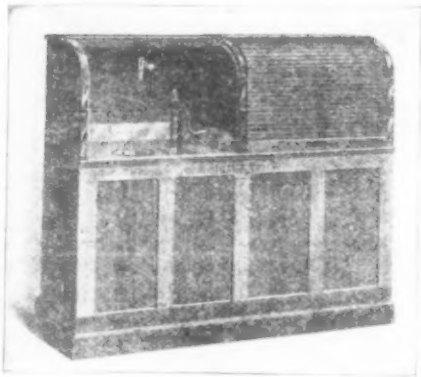

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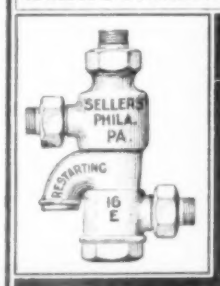

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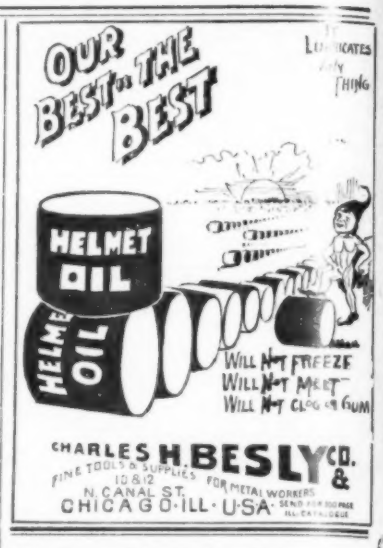

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